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Guntermann & Drunck GmbH

KVM Extender

2009-03

KVM Extender
Extension systems to bridge IT distances

Intelligent solutions

Guntermann & Drunck GmbH was founded in 1985 by the people that gave the company its name.
Over 20 years have since past, and we are now a leading manufacturer of analog and digital KVM switching systems.
As an owner-managed company we work closely with the marketplace and make our decisions with and in the interests of our customers. It is our philosophy to meet our customers while making decisions, to accompany them in the process and ensure that they achieve their goals.

We can do this because as a medium sized company we have short communication paths and all core competencies are in house – from development through to production. This way we can even make the impossible possible at times. If it is thanks to the modularity of the products or by implementing a customised solution. We orient ourselves towards the needs of the customer – and not the other way round.

Organisations, service providers and companies of all sizes managing numerous computers, servers and other network devices trust the comprehensive advice and service provided by Guntermann & Drunck GmbH.

Thanks to these different fields of specialisation, the demands placed on the products are many and are manifold. Our products have to provide a long-life service, be secure, uncomplicated, user-friendly, understandable and adaptable.

Overview of KVM Extenders

KVM Extenders are used to extend the access to your computer or server for one or 2 concurrent workstations. In principle, the systems consist of two main components: the computer modules (computer / server link) and the remote user modules (link to the user peripherals).

The KVM Extenders extend the computer signals:
Digital video/analog video • Keyboard/mouse PS/2 and USB • Transparent USB 1.1 or USB 2.0 • RS232 • Audio • and FireWire
Depending on the product and application, different signals are bundled together – from one single signal extension for audio through to 4-way video/audio/RS232/USB1.1 and keyboard/mouse in one product.
Depending on the signal being extended and the transmission medium being used, distances of 50 - 10,000 metres can be bridged. The transmission paths are similar in character to a dedicated 1:1 link.

Multi-Signal KVM Extenders

- **DVIVision**
  - Digital video, keyboard/mouse PS/2 and USB, USB 1.1 transparent, audio, RS232
  - CAT-x cable
  - Up to 140 metres
- **FIBREVision**
  - Digital video, keyboard/mouse PS/2 and USB, USB 1.1 transparent, audio, RS232
  - 2 optic fibres
  - Up to 10,000 metres (USB 1.1 reduced to 2000 m)
- **CATVision**
  - Analog video, keyboard/mouse PS/2 and USB, USB 1.1 transparent, audio, RS232
  - CAT-x cable
  - Up to 300 metres (USB 1.1 reduced to 200 m)
- **LwLVision**
  - Analog + digital video, keyboard/mouse PS/2 and USB, USB 1.1 transparent, audio, RS232
  - 2 optic fibres
  - Up to 10,000 metres (USB 1.1 reduced to 2000 m)

Multi-Channel-Video KVM Extender

- **DVIVision-MC** as for DVIVision, but with up to 3 digital video channels per system
- **FIBREVision-MC** as for FIBREVision, but with up to 2 digital video channels per system
- **CATVision-MC** as for CATVision, but with up to 4 analog video channels per system
- **LwLVision-MC** as for LwLVision, but with up to 2 digital / analog video channels per system

Single-Signal KVM Extender

- **USB 1.1 Extender** USB 1.1 signals up to 100 metres via CAT-x cable
- **USB 2.0 Extender** USB 2.0 signals up to 50 metres via CAT-x cable
- **AudioTransceiver** Stereo audio up to 600 metres via CAT-x cable
- **FireWire-800 Transceiver** IEEE1394b signals up to 500 metres via 2 fibre optics
- **RS232 Extender** RS232 data up to 400 metres via CAT-x cable
- **VS2plus** Analog video up to 110 metres via multi-coaxial cable

Applications
Our customers use these products in the fields of control rooms, digital signage, mobile and stationary radio technology as well as process control, just to give a few examples.

Flexibility
Due to the variety of signals in the IT sector and the corresponding incoming connection options products cannot support all signal types. To be able to offer a wide range despite this, we have the appropriate converters and adapters which can integrate even the "exotic ones" into your KVM solution. Speak to us.

Combinability
Virtually all products in our range can be combined with one another. If you are setting up a complex system or if the performance of a product is not sufficient for your specific application, our sales team will be pleased to advise you on the relevant combined solutions to achieve your overall functionality.

x = 5, 6, 7

The DVIVision system forms part of the KVM Extender group and extends keyboard, digital video, mouse, audio, RS232 and USB 1.1 signals transparent via CAT-x cable up to 140 m.
The multi-channel variants can transmit 2 or 3 video channels.

The system consists of two main components; the computer module (transmitter) and the user module (receiver).
The modules are interconnected via CAT-x cable.
The system facilitates the operation of a computer via 2 concurrent (1 x transmitter-side, 1 x receiver-side) workstations.

Highlights

- ***Resolution up to 1920 x 1200 @ 60Hz***
- ***Max. transmission length up to 140 m via CAT-x cable***
- ***PS/2 and USB keyboard/mouse support***
- ***24 Bit colour depth***
- ***E-DDC support***
- ***Redundant power supply (optional)***
- ***Optional equipment features: Audio, RS232 (data and hand-shake), USB 1.1 (transparent, high power)***
- ***Multi-channel variants for up to 3 video transmissions***
- ***Local workstation included in the modules as standard***
- ***Integrated power pack***
- ***Suitable for all operating systems***

The DVIVision computer modules transmit the following signals as standard:
1 x digital video and
1 x PS/2 or USB keyboard/mouse

The computer modules are available in variants with up to 3 video channels.

Each of these variants is also available with the following optional equipment features:
- Audio + transparent RS232 (only in combination)
- Transparent USB 1.1

Front view

Computer module DVIVision MC3-ARU-CPU

Article no.
A131 0028

As computer and user modules are fundamentally compatible, the user modules DVIVision-CON also transmit the following signals as standard:
1 x digital video and
1 x PS/2 or USB keyboard/mouse

The user modules are available in the same variants and with the same optional equipment features.

Front view

User module DVIVision MC3-ARU-CON

Article no.
A132 0018

System features

Workstation per system	2 (concurrent)
Number of monitors/workstation	1 to 3
Computers per system	1
Signal type/video	digital video
Analog resolution (only connection to workstations)	up to 1920 x 1200 @ 60 Hz
Digital resolution	from 640 x 480 @ 100 Hz to 1920 x 1200 @ 60 Hz
Digital colour mode	24 Bit
Transmission type Computer module – user module	dedicated CAT-x link
Transmission length (max.) Computer module – user module	140 m (depending on cable)
Transmission cable type	CAT-x cable
Update process	local service socket
Operation environment	
Temperature	+5 to +45 °C
Air humidity	20 – 80 %, non-condensing
Conformity	CE, RoHS

x = 5e, 6, 7

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

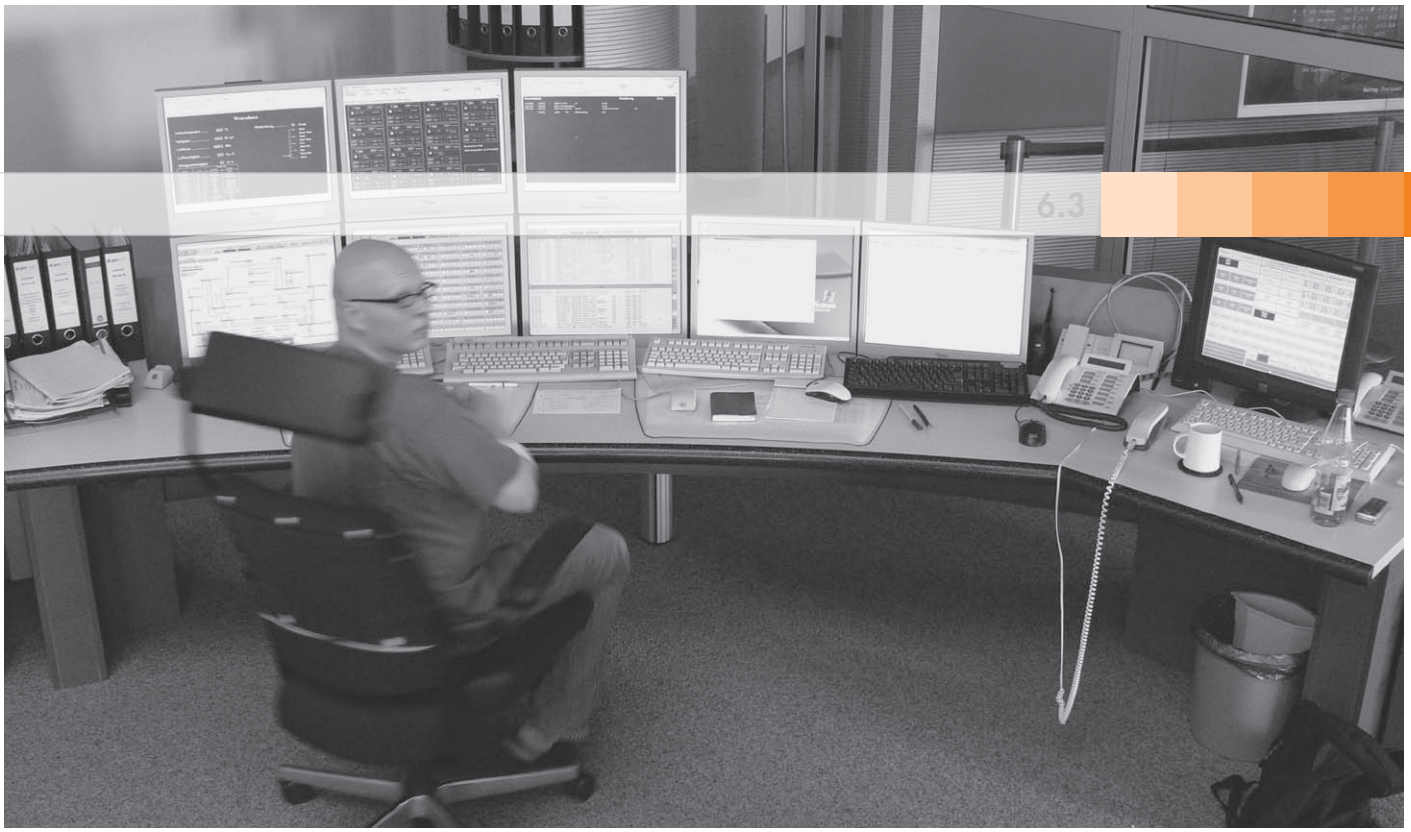
Area:

Video	Resolutions up to 1920 x 1200 @ 60 Hz can be selected
	Forwarding and saving of enhanced DDC info between remote monitor and computer
Connection	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Thanks to the different types of signal, the variants always provide the right transmission solution
	Remote power switching with "DVI Power" add-on component

Operating the main components

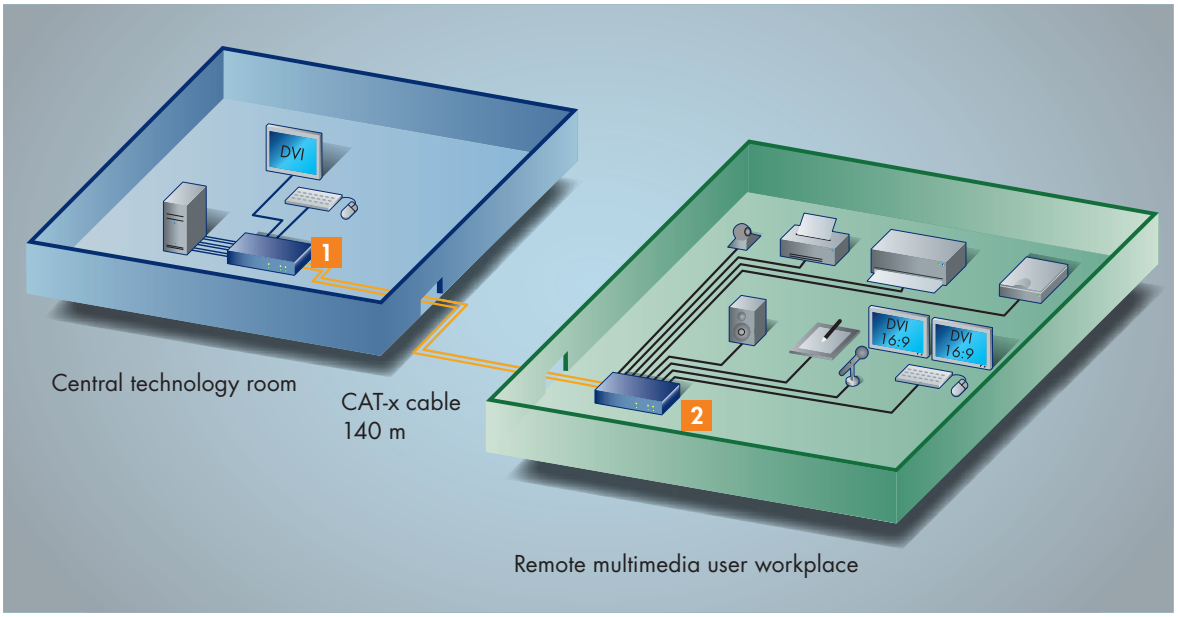
The system itself needs no explicit operation.
The switching between the two modules is carried out automatically via keyboard or mouse input.

Operation



System diagram

1 DVIVision-MC2-ARU-CPU
2 DVIVision-MC2-ARU-CON



Example: Multimedia workstation
The multimedia computer is positioned in an air-conditioned, sound-proofed technology room.
For maintenance purposes the computer can be accessed in the technology room via the connected boot monitor.

The DVIVision extends the signals 2-way digital video, RS232, audio and USB 1.1 via 140 m CAT-x cable to the remote workstation.
The operator has up to 4 USB devices available; a serial graphics panel, bidirectional audio signals in the form of microphone and loudspeaker as well as two digital 16:9 graphics displays.

The workstation is not affected by fan noise or heat developing from the computer.
Optimum access to the computer is provided in the technology room.

Equipment

Every DVIVision system can be ordered with the following equipment features as an option.
- Audio and RS232 (only in combination)
- Transparent USB 1.1

The equipment features given make up the corresponding equipment of a DVIVision device.
These can also be retrofitted at the factory on request.

Audio-RS232

Component for transmitting audio and transparent RS232 signals

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for user	audio	–	2 x 3.5 mm socket (speaker, micro in)
	RS232	–	1 x D-sub 9 plug
to computer	Audio	2 x 3.5 mm socket (line in, line out)	–
	RS232	1 x D-sub 9 socket	–
Transmission	Additional CAT-x cable	no	no
Design		internal	
Audio specification	Resolution	24-bit digital	
	Sampling rate	96 kHz	
	Bandwidth	22 kHz	
	Microphone preamplification	20 dB	
RS232 specification	Transmission rate	max. 115,200 bit/s	
	Signals transmitted	RxD, TxD, RTS, CTS, DTR, DSR, DCD	

Transparent USB 1.1

Component for transmitting transparent USB 1.1 signals

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for user		–	4 x USB-A socket
to computer		1 x USB-B socket (both for keyboard/mouse)	–
Transmission	Additional CAT-x cable	no	
Design		internal	
USB specifications		transparent USB 1.1	
	Transmission length	up to 140 m	
	Support	High power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

x = 5e, 6, 7

Expansion
DVI Power

This component can be retrofitted at the factory on request.

The component "DVI Power" permits the computer to be switched on and off remotely (reset and ATX power switching). To do this, a slot card is inserted into the computer to be controlled and connected to the computer module.
On the remote workstation there is corresponding operating hardware from the customer (button, etc.) which is connected to the user module.

The function is normally available for all DVIVision variants. The prerequisite for "DVI-Power" is a "Audio-RS232" component being fitted. For more details, please contact our sales team.

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for workstation		–	RJ9 socket (modular 4/4)
to computer		RJ9 socket (modular 4/4)	–
Transmission	Additional CAT-x cable	no	

x = 5e, 6, 7

1. Single-channel (1 x video)

Rear view

DVIVision
ARU-CPU
Computer module

Article no.
A111 0071

Rear view

DVIVision
ARU-CON
User module

Article no.
A112 0069

The DVIVision single-channel is also available as a **twin variant**.
It combines two computers or user modules in a 19" height module.
This provides a space-saving way of operating two computers remotely.

Individual features of the modules

Technical data			Computer module DVIVision-CPU	User module DVIVision-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.4-0.2A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.2A	+12VDC/1.2A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 1.2 kg	approx. 1.2 kg
Interfaces				
	for workstation	Monitor	1 x DVI-I socket	1 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	1 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	1 x RJ45 socket	1 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	1	1
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

2. Multi-channel 2 (2 x video)

Rear view

DVIVision
MC2-ARU-CPU
Computer module

Article no.
A121 0060

Rear view

DVIVision
MC2-ARU-CON
User module

Article no.
A122 0041

Individual features of the modules

Technical data			Computer module DVIVision-MC2-CPU	User module DVIVision-MC2-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.4-0.3A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.7A	+12VDC/1.5A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3 kg	approx. 3 kg
Interfaces				
	for workstation	Monitor	2 x DVI-I socket	2 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	2 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	2 x RJ45 socket	2 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	2	2
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

3. Multi-channel 3 (3 x video)

Rear view

DVIVision
MC3-ARU-CPU
Computer module

Article no.
A131 0028

Rear view

DVIVision
MC3-ARU-CON
User module

Article no.
A132 0018

Individual features of the modules

Technical data			Computer module DVIVision-MC3 CPU	User module DVIVision-MC3 CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.7-0.3A	AC100-240V/60-50Hz 0.6-0.3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/2.4A	+12VDC/2.1A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3.2 kg	approx. 3.1 kg
Interfaces				
	for workstation	Monitor	3 x DVI-I socket	3 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	3 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	3 x RJ45 socket	3 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	3	3
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

1. Single-channel (1 x video)

To ensure that the computer module and user module match, please check that the functional features (letters "ARU") are identical for both modules.

Computer modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0063	DVIVision-CPU			●	
A111 0064	DVIVision-CPU-RM				●
A111 0069	DVIVision-AR-CPU	●		●	
A111 0070	DVIVision-AR-CPU-RM	●			●
A111 0065	DVIVision-U-CPU		●	●	
A111 0066	DVIVision-U-CPU-RM		●		●
A111 0071	DVIVision-ARU-CPU	●	●	●	
A111 0072	DVIVision-ARU-CPU-RM	●	●		●
A111 0067	Twin-DVIVision-CPU			●	●*1
A111 0073	Twin-DVIVision-AR-CPU	●		●	●*1
A111 0068	Twin-DVIVision-U-CPU		●	●	●*1
A111 0074	Twin-DVIVision-ARU-CPU	●	●	●	●*1

User modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0049	DVIVision-CON			●	
A112 0050	DVIVision-CON-RM				●
A112 0067	DVIVision-AR-CON	●		●	
A112 0068	DVIVision-AR-CON-RM	●			●
A112 0051	DVIVision-U-CON		●	●	
A112 0052	DVIVision-U-CON-RM		●		●
A112 0069	DVIVision-ARU-CON	●	●	●	
A112 0070	DVIVision-ARU-CON-RM	●	●		●
A112 0053	Twin-DVIVision-CON			●	●*1
A112 0071	Twin-DVIVision-AR-CON	●		●	●*1
A112 0054	Twin-DVIVision-U-CON		●	●	●*1
A112 0072	Twin-DVIVision-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

2. Multi-channel 2 (2 x video)

To ensure that the computer module and user module match, please check that the functional features (letters "ARU") are identical for both modules.

Computer modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A121 0053	DVIVision-MC2-CPU			●	●*1
A121 0058	DVIVision-MC2-AR-CPU	●		●	●*1
A121 0055	DVIVision-MC2-U-CPU		●	●	●*1
A121 0060	DVIVision-MC2-ARU-CPU	●	●	●	●*1

User modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A122 0034	DVIVision-MC2-CON			●	●*1
A122 0039	DVIVision-MC2-AR-CON	●		●	●*1
A122 0036	DVIVision-MC2-U-CON		●	●	●*1
A122 0041	DVIVision-MC2-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and description.

NOTE

The abbreviations, such as CPU and others, are explained in more detail here.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU") are identical for both modules.

3. Multi-channel 3 (3 x video)

Computer modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A131 0025	DVIVision-MC3-CPU			●	●*1
A131 0026	DVIVision-MC3-AR-CPU	●		●	●*1
A131 0027	DVIVision-MC3-U-CPU		●	●	●*1
A131 0028	DVIVision-MC3-ARU-CPU	●	●	●	●*1

User modules

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A132 0015	DVIVision-MC3-CON			●	●*1
A132 0016	DVIVision-MC3-AR-CON	●		●	●*1
A132 0017	DVIVision-MC3-U-CON		●	●	●*1
A132 0018	DVIVision-MC3-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

Connectivity

According to the equipment features selected, the computer connection cables are included, length 2 m. Power supply cable and power packs are included as standard, redundant power supply always needs to be ordered separately. Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	DVI-D-SL-M/M-x	Video cables	computer connection
	RS232-M/F-x	Serial cables	computer connection
	Audio-M/M-x	Audio cables	computer connection
	USB-AM/BM-x	USB cables	computer connection
	PS/2-M/M purple-x	Keyboard/mouse cables	computer connection
	PS/2-M/M green-x	Keyboard/mouse cables	computer connection
	USB-Service-2	Particular cable	firmware updates
	ADAPTER DVI-I-HD15F	Adapters (passive)	adapter for comp. connect.
	K-C5/HR-x	Ready-made cables	transmission up to 100 m
	K-C7/LD-x	Ready-made cables	transmission over 100 m

x = length in metres, see KVM Connectivity for lengths available.

Expansion DVI Power

Art. no.	Description
A180 0003	DVI-Power-CPU (requires an existing AR- or ARU component)
A180 0004	DVI-Power-CON (requires an existing AR- or ARU component)

Accessories

Art. no.	Description	
A411 0008	Power-Set 12-Type 2	Power supply, redundant

x = 5e, 6, 7

When ordering, please quote the article number and description.

The FIBREVision system forms part of the KVM Extender group and extends keyboard, digital video, mouse, audio, RS232 and USB 1.1 transparent signals via fibre optics (2 fibres) up to 550 m or 10.000 m. USB 1.1 signals are transmitted transparent up to 2.000 m. The video outlet can be operated either digitally or analog. The multi-channel variant can transmit 2 video channels.

The system consists of two main components: the computer module (transmitter) and the user module (receiver).
The modules are interconnected via fibre optics. The system facilitates the operation of a computer via 2 concurrent (1 x transmitter-side, 1 x receiver-side) workstations.

Highlights

- ***Resolution up to 1920 x 1200 @ 60 Hz and 1280 x 1024 @ 85 Hz***
- ***Max. transmission length up to 10.000 m via fibre optic***
- ***Galvanic separation of transmitter and receiver***
- ***Insusceptible against interference radiation***
- ***PS/2 and USB keyboard/mouse support***
- ***Support of digital and analog video***
- ***Redundant power supply (optional)***
- ***Optional features: audio and RS232 (data and handshake), USB 1.1 (transparent, high power)***
- ***Local user console at the modules included in standard***
- ***Integrated power pack***
- ***Multi-channel variant for up to 2 video transmissions***

The FIBREVision computer modules transmit the following signals as standard:
1 x digital video
1 x PS/2 or USB keyboard/mouse

The computer modules are available with 2 video channels.

The modules are also available with the following equipment features as an option:
- audio + transparent RS232 (only in combination)
- transparent USB 1.1

Front view

Computer module FIBREVision(S)-ARU-CPU

Article no.
A111 0114

As computer and user modules are basically compatible, the user modules FIBREVision-CON also transmit the following signals as standard:
1 x digital video
1 x PS/2 or USB keyboard/mouse
1 x audio + transparent RS232 (in combination)

The user modules are available in the same variants and with the same optional equipment features.

Front view

User module FIBREVision(S)-MC2-ARU-CON

Article no.
A112 0115

System features

User console per module	2 (concurrent)
Number of monitors/workstation	1 to 2
Computers per system	1
Signal type/video	digital video
Resolution analog (only connection to workstation)	to 1920 x 1200 @ 60Hz
Resolution digital	from 640 x 480 @ 100 Hz to 1920 x 1200 @ 60 Hz
Digital colour mode	24 bit
Transmission type CPU module – user module	dedicated fibre optic link
Transmission length (max.) CPU – user module	550 m via 2 multimode fibres (50/125 µm)
Transmission length (max.) CPU – user module	10.000 m via 2 singlemode fibres (9/125 µm)
Transmission cable type	fibre optics (2 fibres)
Update process	local service socket
Operating environment	
Temperature	+5 to +45 °C
Air humidity	20 - 80 %, non-condensing
Conformity	CE, RoHS

System hardware

The design of the system hardware offers a range of advantages in use. The following table illustrates just a few of those benefits.

Area:

Video	DVI resolutions up to 1920 x 1200 @ 60Hz and 1280 x 1024 @ 85Hz
Connection	Forwarding and saving of enhanced DDC information between remote monitor and computer
	No installation preparation required
	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Remote power switching with additional component „FIBRE-Power“

Operating the main components

The system itself needs no explicit operation.
The switching between the two workstations is carried out automatically via keyboard or mouse inputs.

Operation

Equipment

Each FIBREVision system can be ordered with the following equipment features as an option:

- **Audio and RS232 (only in combination)**
- **Transparent USB 1.1**

The given equipment features make the corresponding equipment of a FIBREVision device.
These features can also be retrofitted at the factory on request.

Audio-RS232

Component for transmitting audio and transparent RS232 signals

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workstation	Audio	–	2 x 3,5 mm socket (speaker, micro in)
	RS232	–	1 x D-Sub 9 plug
to computer	Audio	2 x 3,5 mm socket (Line in, Line out)	–
	RS232	1 x D-Sub 9 socket	–
Transmission	Additional fibre optics	no	no
Design		internal	
Audio specification	Resolution	24 bit digital	
	Sampling rate	96 kHz	
	Bandwidth	22 kHz	
	Microphone preamplification	20 dB	
RS232 specification	Transmission rate	max. 115.200 bit/s	
	Signals transmitted	RxD, TxD, RTS, CTS, DTR, DSR, DCD	

Transparent USB 1.1

Component for transmitting transparent USB 1.1 signals

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workstation		–	4 x USB-A socket
to computer		1 x USB-B socket (for both keyboard/mouse)	–
Transmission	Additional fibre optics	no	
Design		internal	
USB specification		transparent USB 1.1	
	Transmission length	up to 2.000 m	
	Support	high power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

Expansion FIBRE-Power

This component can be retrofitted on request.

The component "FIBRE Power" permits the computer to be switched on and off remotely (reset and ATX power switching). To do this, a slot card is inserted into the computer to be controlled and connected to the computer module.
On the remote workstation there is corresponding operating hardware from the customer (button, etc.) which is connected to the user module.

The function is normally available for all FIBREVision variants. "FIBRE-Power" requires an existing "Audio-RS232" component like the variants FIBREVision-AR or FIBREVision-ARU. For further details, please contact our sales team.

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workstation		–	RJ11 socket
to computer		RJ11 socket	–
Transmission	additional fibre optics	no	

1. Single-Channel (1 x video)

The FIBREVision single-channel is provided in 2 variants:
Using multimode fibres (50/125 µm), FIBREVision(M) bridges up to 550 m.
Using singlemode fibres (9/125 µm), FIBREVision(S) bridges up to 10.000 m.

Back view

FIBREVision(S)-ARU-CPU
Computer module

Article no.
A111 0093

Back view

FIBREVision(S)-ARU-CON
User module

Article no.
A112 0090

The FIBREVision single-channel is also available as a **twin variant**.
It combines two computers or user modules in a 19" height module.
This provides a space-saving way of operating two computers remotely.

Individual features of the modules

Technical data			Computer module FIBREVision-CPU	User module FIBREVision-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x IEC plug (IEC-320 C14)	1 x IEC plug (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.3-0.2A	AC100-240V/60-50Hz 0.3-0.2A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Voltage	+12VDC/1,0A	+12VDC/1,0A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 1.2 kg	approx. 1.3 kg
Interfaces/specifications				
	for workstation	Monitor	1 x DVI-I socket	1 x DVI-I socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	1 x DVI-D socket	–
		Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	CPU module – user module	1 x LC Duplex socket	1 x LC Duplex socket
		No. of fibre optics from CPU module – user module	2	2
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

2. Multi-channel 2 (2 x video)

The FIBREVision single-channel is provided in 2 variants:
Using multimode fibres (50/125 µm), FIBREVision(M) bridges up to 550 m.
Using singlemode fibres (9/125 µm), FIBREVision(S) bridges up to 10,000 m.

Rear view

FIBREVision(S)-MC2-ARU-CPU
Computer module

Article no.
A111 0114

Rear view

FIBREVision(S)-MC2-ARU-CON
User module

Article no.
A112 0115

Individual features of the modules

Technical data			Computer module FIBREVision-MC2-CPU	User module FIBREVision-MC2-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x IEC plug (IEC-320 C14)	1 x IEC plug (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.5-0.2A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Voltage	+12VDC/1.7A	+12VDC/1.5A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3.0 kg	approx. 3.0 kg
Interfaces/specifications				
	for workstation	Monitor	2 x DVI-I socket	2 x DVI-I socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	1 x DVI-D socket	–
		Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	CPU module – user module	1 x LC Duplex socket	1 x LC Duplex socket
		No. of fibre optics from CPU module – user module	4	4
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-Channel (1 x video) Multimode

Computer module

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0079	FIBREVision(M)-CPU			●	
A111 0080	FIBREVision (M)-CPU-RM				●
A111 0083	FIBREVision (M)-AR-CPU	●		●	
A111 0084	FIBREVision (M)-AR-CPU-RM	●			●
A111 0081	FIBREVision (M)-U-CPU		●	●	
A111 0082	FIBREVision (M)-U-CPU-RM		●		●
A111 0085	FIBREVision (M)-ARU-CPU	●	●	●	
A111 0086	FIBREVision (M)-ARU-CPU-RM	●	●		●
A111 0095	Twin-FIBREVision (M)-CPU			●	●*1
A111 0096	Twin-FIBREVision (M)-AR-CPU	●		●	●*1
A111 0097	Twin-FIBREVision (M)-U-CPU		●	●	●*1
A111 0098	Twin-FIBREVision (M)-ARU-CPU	●	●	●	●*1

User module

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0076	FIBREVision (M)-CON			●	
A112 0077	FIBREVision (M)-CON-RM				●
A112 0080	FIBREVision (M)-AR-CON	●		●	
A112 0081	FIBREVision (M)-AR-CON-RM	●			●
A112 0078	FIBREVision (M)-U-CON		●	●	
A112 0079	FIBREVision (M)-U-CON-RM		●		●
A112 0082	FIBREVision (M)-ARU-CON	●	●	●	
A112 0083	FIBREVision (M)-ARU-CON-RM	●	●		●
A112 0092	Twin-FIBREVision (M)-CON			●	●*1
A112 0093	Twin-FIBREVision (M)-AR-CON	●		●	●*1
A112 0094	Twin-FIBREVision (M)-U-CON		●	●	●*1
A112 0095	Twin-FIBREVision (M)-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and the description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-Channel (1 x video) Singlemode

Computer module

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0087	FIBREVision(S)-CPU			●	
A111 0088	FIBREVision(S)-CPU-RM				●
A111 0091	FIBREVision(S)-AR-CPU	●		●	
A111 0092	FIBREVision(S)-AR-CPU-RM	●			●
A111 0089	FIBREVision(S)-U-CPU		●	●	
A111 0090	FIBREVision(S)-U-CPU-RM		●		●
A111 0093	FIBREVision(S)-ARU-CPU	●	●	●	
A111 0094	FIBREVision(S)-ARU-CPU-RM	●	●		●
A111 0099	Twin-FIBREVision(S)-CPU			●	●*1
A111 0100	Twin-FIBREVision(S)-AR-CPU	●		●	●*1
A111 0101	Twin-FIBREVision(S)-U-CPU		●	●	●*1
A111 0102	Twin-FIBREVision(S)-ARU-CPU	●	●	●	●*1

User module

Art. no.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0084	FIBREVision(S)-CON			●	
A112 0085	FIBREVision(S)-CON-RM				●
A112 0088	FIBREVision(S)-AR-CON	●		●	
A112 0089	FIBREVision(S)-AR-CON-RM	●			●
A112 0086	FIBREVision(S)-U-CON		●	●	
A112 0087	FIBREVision(S)-U-CON-RM		●		●
A112 0090	FIBREVision(S)-ARU-CON	●	●	●	
A112 0091	FIBREVision(S)-ARU-CON-RM	●	●		●
A112 0096	Twin-FIBREVision(S)-CON			●	●*1
A112 0097	Twin-FIBREVision(S)-AR-CON	●		●	●*1
A112 0098	Twin-FIBREVision(S)-U-CON		●	●	●*1
A112 0099	Twin-FIBREVision(S)-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and the description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Multi-Channel (2 x video) Multimode

Computer module

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0103	FIBREVision(M)-MC2-CPU			●	●*1
A111 0104	FIBREVision(M)-MC2-AR-CPU	●		●	●*1
A111 0105	FIBREVision(M)-MC2-U-CPU		●	●	●*1
A111 0106	FIBREVision(M)-MC2-ARU-CPU	●	●	●	●*1

User module

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0104	FIBREVision(M)-MC2-CON			●	●*1
A112 0105	FIBREVision(M)-MC2-AR-CON	●		●	●*1
A112 0106	FIBREVision(M)-MC2-U-CON		●	●	●*1
A112 0107	FIBREVision(M)-MC2-ARU-CON	●	●	●	●*1

Multi-Channel (2 x video) Singlemode

Computer module

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0111	FIBREVision(S)-MC2-CPU			●	●*1
A111 0112	FIBREVision(S)-MC2-AR-CPU	●		●	●*1
A111 0113	FIBREVision(S)-MC2-U-CPU		●	●	●*1
A111 0114	FIBREVision(S)-MC2-ARU-CPU	●	●	●	●*1

User module

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0112	FIBREVision(S)-MC2-CON			●	●*1
A112 0113	FIBREVision(S)-MC2-AR-CON	●		●	●*1
A112 0114	FIBREVision(S)-MC2-U-CON		●	●	●*1
A112 0115	FIBREVision(S)-MC2-ARU-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack
When ordering, please quote the article number and description.

Connectivity

According to the equipment features selected, the computer connection cables are included, length 2 m. Power supply cable and power packs are included as standard, redundant power supply to be ordered separately if desired. Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	DVI-D-SL-M/M-x	Video cables	Computer connection
	ADAPTER DVI-I-HD15F	Adapters (passive)	Adaption computer connection
	PS/2-M/M-x purple	Keyboard/mouse cables	Computer connection
	PS/2-M/M-x green	Keyboard/mouse cables	Computer connection
	RS232-M/F-x	Serial cables	Computer connection
	Audio-M/M-x	Audio cables	Computer connection
	USB-AM/BM-x	USB cables	Computer connection
	USB-Service-2	Particular cables	Firmware update
	K-LwLm-LCD-x	Ready-made cables	Transmission in multimode
	K-LwLs-LCD-x	Ready-made cables	Transmission in singlemode

Expansion FIBRE-Power

Art. no.	Description
A180 0008	FIBRE-Power (requires an existing AR- or ARU component)

Accessories

Art. no.	Description	
A411 0008	Power-Set 12-Typ 2	Power supply redundant

x = length in metres, see KVM Connectivity for lengths available.
When ordering, please quote the article number and the description.

The CATVision system is part of the group of KVM Extenders and extends keyboard, analog video, mouse, audio and RS232 signals via CAT cable up to 300 m. USB 1.1 signals are transmitted tranparent up to 200 m. Multi-channel variants can transmit 2, 3 or 4 video channels.

The system consists of two main components; the computer module (transmitter) and the user module (receiver). Modules are interconnected via CAT-x cable. The system facilitates the operation of a computer via 2 concurrent (1 x transmitter-side, 1 x receiver-side) workstations.

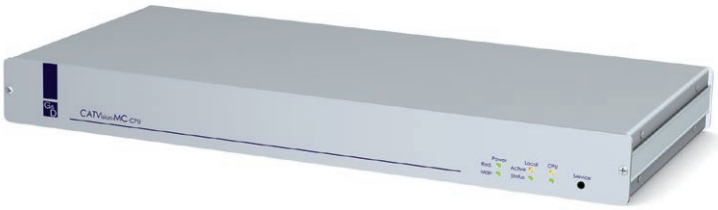
Highlights

- ***Resolution up to 1920 x 1440 @ 75 Hz***
- ***Max. transmission length up to 300 m via CAT-x cable***
- ***PS/2 and USB keyboard/mouse support***
- ***Video optimisation via automatic cable compensation***
- ***Individual video-tuning via OSD (IVT)***
- ***Access protection (username/password)***
- ***Rights management for multiple users***
- ***Redundant power supply (optional)***
- ***Compensation of runtime differences/delay (optional)***
- ***Optional equipment features: Audio, RS232 (data and handshake), USB 1.1 (transparent, high power)***
- ***Multi-channel variants for up to 4 video transmissions***
- ***Local workstation included in the modules as standard***
- ***Integrated power pack***

CATVision computer modules transmit the following signals as standard:
1 x analog video and
1 x PS/2 or USB keyboard/mouse

The computer modules are available in variants with up to 4 video channels.

Each of these variants is also available with the following equipment features as an option:
- Audio
- Transparent RS232
- Transparent USB 1.1
- Delay



Front view

Computer module CATVision-MC4-ARUD-CPU

Article no.
A141 0023

As computer and user modules are fundamentally compatible, the user module CATVision-CON also transmits the following signals as standard:
1 x analog video and
1 x PS/2 or USB keyboard/mouse

The user modules are available in the same variants and with the same optional equipment features. An exception to this is the "delay" feature. This only works in the computer module and therefore does not need to be considered on the workstation side.

Front view

User module CATVision MC4-ARU-CON

Article no.
A142 0011

System features

User per system	2 (concurrent)
Number of monitors/user	1 to 4
Computers per system	1
Video format	analog video
Resolution	up to 1920 x 1440 @ 75 Hz (depending on cable length)
Video bandwidth	250 MHz
Transmission type	
Computer module – user module	dedicated CAT-x link
Transmission length (max.)	
Computer module – user module	300 m (depending on resolution)
Transmission cable type	CAT-x cable
Update process	local service socket
Operation/configuration via	OSD (AdonIS)
	Individual video tuning (IVT)
	Hotkeys
Operation environment	
Temperature	+5 to +40 °C
Air humidity	20 – 80 %, non-condensing
Conformity	CE, RoHS

x = 5, 6, 7

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits for illustration.

Area:

Video	VGA resolutions up to 1920 x 1440 @ 75 Hz can be selected
	Automatic and individual video optimisation possible
Connection	No installation preparations
	Individual system modules do not need to be switched on in a specific sequence
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Thanks to the different types of signal, the variants always provide the right transmission solution
	Remote power switching with add-on component "CV Power"

Operating the main components

The system itself needs no explicit operation. Additional functions (e.g. blanking) are initiated via the OSD AdonIS or keyboard hotkeys.
The configuration of the system is also carried out via AdonIS.

OSD (AdonIS and IVT)

Functional features

The user is provided with numerous functions which can be used to modify the operation of CATVision in accordance with individual requirements and security guidelines.

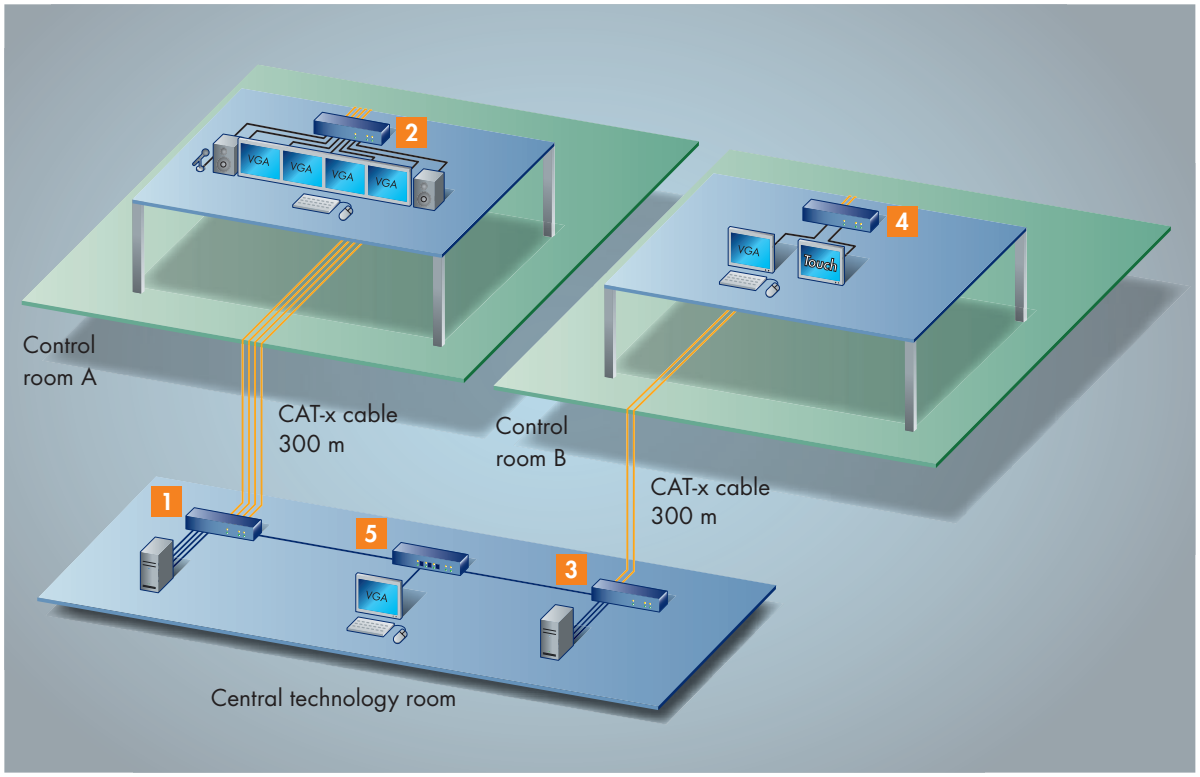
User	Up to 8 individual accounts can be configured (+ supervisor and open access account)
	Define user-based OSD displays
	Assign user-based configuration rights
	Workstation logs itself off automatically following inactivity (optional)
Workstation	Integrate keyboards with special functions (optional)
	Set up open, direct access without password prompt
	OSD position and size can be freely defined
	Password protection can be activated
	Blanking a workstation while working on the other workstation (optional)
	Activate continuous access to a workstation on the computer
	Image and access to a workstation is only enabled after entering a hotkey
	Activate the permanent display of the workstation name on the screen
	Edit description of the system workstation
	Exclusive operating mode available for every workstation
Update	Perform firmware updates via service socket
Video	Trigger the automatic video tuning
	Individual video tuning via IVT, for individual modification of the automatic features (video amplification, cable type matching, delay setting)

NOTE

The abbreviations, such as CPU and others, are explained in more detail here.

System diagram

1 CATVision-MC4-CPU
2 CATVision-MC4-CON
3 CATVision-MC2-R-CPU
4 CATVision-MC2-R-CON
5 miniMUX2



Example: Control room

The operation of process computers located in the technology room is carried out from remote control rooms.
Multiple analog video, audio, RS232 as well as keyboard/mouse are transmitted across a distance of up to 300 m.
The computers in the technology room are accessible for maintenance work at all times and are provided with the optimum operation conditions.
For maintenance purposes, the computers in the technology room are interconnected via a miniMUX2.
The boot monitor is visible in each case. This means that one workstation can be used to operate both computers.
When work is being carried out in the technology room, the operator workstations are blocked.
Technicians and operators are separated from one another. The operators do not have to worry about the technology.

Equipment

Each CATVision system can be ordered with the following equipment features as an option.

- **Transparent RS232**
- **Audio (only in combination with RS232)**
- **Transparent USB 1.1**
- **Delay**

The equipment features given produce the relevant equipment specifications of a CATVision device. Equipment features can be retrofitted at the factory on request.

Transparent RS232

Component for the transmission of transparent RS232 signals

Technical data		Computer module CATVision-CPU	User module CATVision-CON
Interfaces and specifications			
for workstation	RS232	–	1 x D-sub 9 plug
to computer	RS232	1 x D-sub 9 socket	–
Transmission	Additional CAT-x cable	no	no
Design		internal	
RS232 specification	Transmission rate 300 m	Max. 38,400 bit/s	
	Transmission rate 100 m	Max. 57,600 bit/s	
	Signals that can be transmitted	TxD, RxD, RTS, CTS, DTR, DSR	

Audio

Component for the transmission of audio signals (only in combination with RS232)

Technical data		Computer module CATVision-CPU	User module CATVision-CON
Interfaces and specifications			
for workstation	Audio	–	3 x 3.5 mm socket (Line in, micro in, speaker)
to computer	Audio	2 x 3.5 mm socket (line in, line out)	–
Transmission	Additional CAT-x cable	no	no
Design		internal	
Audio specification	Resolution	18-bit digital	
	Sampling rate	48 kHz	
	Bandwidth	22 kHz	
	Microphone preamplification	20 dB	

Delay

Component for compensating of runtime differences (delay)

Inside CAT cables the individual wire pairs are stranded in different ways. This means that the overall lengths of the individual wires change. The RGB colour components of the analog graphics signal therefore reach the remote monitor after a time delay.
These runtime differences generate colour shadows which produce an overall impression of fuzziness.
The "delay compensation" equalises runtime differences up to 46 ns and ensures the simultaneous "arrival" of the colours on the monitor.

The delay compensation is used only in the computer module and can be carried out both automatically as well as manually.

With G&D cables the use of the "delay" component is basically recommended for distances exceeding 100 meters. Using the cable "K-C5-OIL", "delay" is obligatory. At use of non-G&D cables even below 100 meters a use might be reasonable.

Technical data		Computer module CATVision-CPU	User module CATVision-CON
Interfaces and specifications			
Design		internal	–
Transmission	Additional CAT-x cable	no	

Transparent USB 1.1

Component for transmitting transparent USB 1.1 signals

Technical data		Computer module CATVision-CPU	User module CATVision-CON
Interfaces and specifications			
for workstation		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Additional CAT-x cable	1	
	Interface	1 x RJ45 socket	1 x RJ45 socket
	No. of CAT-x cable from Computer module – user module	1	
Design		internal	
USB specifications		transparent USB 1.1	
	Transmission length	up to 200 m	
	Support	High power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

Expansion CV Power

"CV Power" component for power switching
This component can be retrofitted at the factory on request.

The "CV Power" component allows the computer to be switched on and off remotely (reset and ATX power switching). To do this, a slot card is inserted into the computer to be controlled and connected to the computer module.

On the remote workstation there is corresponding operating hardware from the customer (button, etc.) which is connected to the user module. The function is normally available for all CATVision variants. For more details, please contact our sales team.

Technical data		Computer module CATVision-CPU	User module CATVision-CON
Interfaces and specifications			
for workstation		–	3-pole flange plug
to computer		3-pole flange plug	–
Transmission	Additional CAT-x cable	no	

x = 5, 6, 7

1. Single-channel (1 x video)

Rear view

CATVision
ARU-CPU
Computer module

Article no.
A111 0023

Rear view

CATVision
ARU-CON
User module

Article no.
A112 0013

The CATVision single-channel is also available as a twin variant.
It combines two computer or user modules in a 19" height module.
This provides a space-saving way of operating two computers remotely.

Individual features of the modules

Technical data			Computer module CATVision-CPU	User module CATVision-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 140-80 mA	AC100-240V/60-50Hz 240-100 mA
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/0.6A	+12VDC/0.9A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions (W x H x D)	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
		Rackmount	19", x 1 HU x 210 mm	19", x 1 HU x 210 mm
Weight			approx. 1.2 kg	approx. 1.1 kg
Interfaces				
	for workstation	Monitor	1 x D-sub HD 15 socket	1 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	KVM in	1 x 20-pole MDR socket	–
		USB keyboard/mouse in	1 x USB-B socket	–
	for transmission	Computer module – user module	1 x RJ45 socket	1 x RJ45 socket
		No. of CAT-x cables from computer module – user module	1	1
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5, 6, 7

2. Multi-channel 2 (2 x video)

Rear view

CATVision
MC2-ARU-CPU
Computer module

Article no.
A121 0021

Rear view

CATVision
MC2-ARU-CON
User module

Article no.
A122 0011

The CATVision multi-channel 2 is also available as a twin variant. It combines two computer or user modules in a 19" height module.
This provides a space-saving way to operate two computers with dual-head graphics card remotely.

Individual features of the modules

Technical data			Computer module CATVision-MC2-CPU	User module CATVision-MC2-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.41-0.2A	AC100-240V/60-50Hz 0.3-0.16A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/2A	+12VDC/1.5A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	270 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 1.8 kg	approx. 1.3 kg
Interfaces				
	for workstation	Monitor	2 x D-sub HD 15 socket	2 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/Video/Mouse CPU	1 x 20-pole MDR socket	–
		Video CPU	1 x D-sub HD 15 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	2 x RJ45 socket	2 x RJ45 socket
		No. of CAT-x cable from Computer module – user module	2	2
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5, 6, 7

3. Multi-channel 3 (3 x video)

Rear view

CATVision
MC3-ARU-CPU
Computer module

Article no.
A131 0021

Rear view

CATVision
MC3-ARU-CON
User module

Article no.
A132 0011

Individual features of the modules

Technical data			Computer module CATVision-MC3-CPU	User module CATVision-MC3-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.41-0.2A	AC100-240V/60-50Hz 0.3-0.16A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/2A	+12VDC/1.5A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 2.0 kg	approx. 1.9 kg
Interfaces				
	for workstation	Monitor	3 x D-sub HD 15 socket	3 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/Video/Mouse CPU	1 x 20-pole MDR socket	–
		Video CPU	2 x D-sub HD 15 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	3 x RJ45 socket	3 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	3	3
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5, 6, 7

4. Multi-channel 4 (4 x video)

Rear view

CATVision
MC4-ARU-CPU
Computer module

Article no.
A141 0021

Rear view

CATVision
MC4-ARU-CON
User module

Article no.
A142 0011

Individual features of the modules

Technical data			Computer module CATVision-MC4-CPU	User module CATVision-MC4-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.41-0.2A	AC100-240V/60-50Hz 0.31-0.16A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/2A	+12VDC/1.5A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 2.0 kg	approx. 2.0 kg
Interfaces				
	for workstation	Monitor	4 x D-sub HD 15 socket	4 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/Video/Mouse CPU	1 x 20-pole MDR socket	–
		Video CPU	2 x D-sub HD 15 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	4 x RJ45 socket	4 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	4	4
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5, 6, 7

1. Single-channel (1 x video)

For the computer and user modules to correespond, please ensure that the functional features (letters "ARUD") are identical for both modules. An exception to this is the "delay" component (letter D) which is only used in the computer module. The "D" should not be taken into account when selecting the matching user modules (-CON).

Computer modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A111 0003	CATVision-CPU					●	
A111 0004	CATVision-CPU-RM						●
A111 0005	CATVision-D-CPU				●	●	
A111 0006	CATVision-D-CPU-RM				●		●
A111 0007	CATVision-R-CPU		●			●	
A111 0008	CATVision-R-CPU-RM		●				●
A111 0009	CATVision-RD-CPU		●		●	●	
A111 0010	CATVision-RD-CPU-RM		●		●		●
A111 0011	CATVision-AR-CPU	●	●			●	
A111 0012	CATVision-AR-CPU-RM	●	●				●
A111 0013	CATVision-ARD-CPU	●	●		●	●	
A111 0014	CATVision-ARD-CPU-RM	●	●		●		●
A111 0015	CATVision-U-CPU			●		●	
A111 0016	CATVision-U-CPU-RM			●			●
A111 0017	CATVision-UD-CPU			●	●	●	
A111 0018	CATVision-UD-CPU-RM			●	●		●
A111 0019	CATVision-RU-CPU		●	●		●	
A111 0020	CATVision-RU-CPU-RM		●	●			●
A111 0021	CATVision-RUD-CPU		●	●	●	●	
A111 0022	CATVision-RUD-CPU-RM		●	●	●		●
A111 0023	CATVision-ARU-CPU	●	●	●		●	
A111 0024	CATVision-ARU-CPU-RM	●	●	●			●
A111 0025	CATVision-ARUD-CPU	●	●	●	●	●	
A111 0026	CATVision-ARUD-CPU-RM	●	●	●	●		●
A111 0027	Twin-CATVision-CPU					●	● *1
A111 0028	Twin-CATVision-D-CPU				●	●	● *1
A111 0029	Twin-CATVision-R-CPU		●			●	● *1
A111 0030	Twin-CATVision-RD-CPU		●		●	●	● *1
A111 0031	Twin-CATVision-AR-CPU	●	●			●	● *1
A111 0032	Twin-CATVision-ARD-CPU	●	●		●	●	● *1
A111 0033	Twin-CATVision-U-CPU			●		●	● *1
A111 0034	Twin-CATVision-UD-CPU			●	●	●	● *1
A111 0035	Twin-CATVision-RU-CPU		●	●		●	● *1
A111 0036	Twin-CATVision-RUD-CPU		●	●	●	●	● *1
A111 0037	Twin-CATVision-ARU-CPU	●	●	●		●	● *1
A111 0038	Twin-CATVision-ARUD-CPU	●	●	●	●	●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and description.

1. Single-channel (1 x video)

User modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A112 0003	CATVision-CON					●	
A112 0004	CATVision-CON-RM						●
A112 0005	CATVision-R-CON		●			●	
A112 0006	CATVision-R-CON-RM		●				●
A112 0007	CATVision-AR-CON	●	●			●	
A112 0008	CATVision-AR-CON-RM	●	●				●
A112 0009	CATVision-U-CON			●		●	
A112 0010	CATVision-U-CON-RM			●			●
A112 0011	CATVision-RU-CON		●	●		●	
A112 0012	CATVision-RU-CON-RM		●	●			●
A112 0013	CATVision-ARU-CON	●	●	●		●	
A112 0014	CATVision-ARU-CON-RM	●	●	●			●
A112 0043	Twin-CATVision-CON					●	● *1
A112 0044	Twin-CATVision-R-CON		●			●	● *1
A112 0045	Twin-CATVision-AR-CON	●	●			●	● *1
A112 0046	Twin-CATVision-U-CON			●		●	● *1
A112 0047	Twin-CATVision-RU-CON		●	●		●	● *1
A112 0048	Twin-CATVision-ARU-CON	●	●	●		●	● *1

2. Multi-channel 2 (2 x video)

Computer modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A121 0001	CATVision-MC2-CPU					●	● *1
A121 0003	CATVision-MC2-D-CPU				●	●	● *1
A121 0005	CATVision-MC2-R-CPU		●			●	● *1
A121 0007	CATVision-MC2-RD-CPU		●		●	●	● *1
A121 0009	CATVision-MC2-AR-CPU	●	●			●	● *1
A121 0011	CATVision-MC2-ARD-CPU	●	●		●	●	● *1
A121 0013	CATVision-MC2-U-CPU			●		●	● *1
A121 0015	CATVision-MC2-UD-CPU			●	●	●	● *1
A121 0017	CATVision-MC2-RU-CPU		●	●		●	● *1
A121 0019	CATVision-MC2-RUD-CPU		●	●	●	●	● *1
A121 0021	CATVision-MC2-ARU-CPU	●	●	●		●	● *1
A121 0023	CATVision-MC2-ARUD-CPU	●	●	●	●	●	● *1

2. Multi-channel 2 (2 x video)

Computer modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A121 0025	Twin-CATVision-MC2-CPU					●	● *1
A121 0026	Twin-CATVision-MC2-D-CPU				●	●	● *1
A121 0027	Twin-CATVision-MC2-R-CPU		●			●	● *1
A121 0028	Twin-CATVision-MC2-RD-CPU		●		●	●	● *1
A121 0029	Twin-CATVision-MC2-AR-CPU	●	●			●	● *1
A121 0030	Twin-CATVision-MC2-ARD-CPU	●	●		●	●	● *1

User modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A122 0001	CATVision-MC2-CON					●	
A122 0002	CATVision-MC2-CON-RM						●
A122 0003	CATVision-MC2-R-CON		●			●	
A122 0004	CATVision-MC2-R-CON-RM		●				●
A122 0005	CATVision-MC2-AR-CON	●	●			●	
A122 0006	CATVision-MC2-AR-CON-RM	●	●				●
A122 0007	CATVision-MC2-U-CON			●		●	
A122 0008	CATVision-MC2-U-CON-RM			●			●
A122 0009	CATVision-MC2-RU-CON		●	●		●	
A122 0010	CATVision-MC2-RU-CON-RM		●	●			●
A122 0011	CATVision-MC2-ARU-CON	●	●	●		●	
A122 0012	CATVision-MC2-ARU-CON-RM	●	●	●			●
A122 0031	Twin-CATVision-MC2-CON					●	● *1
A122 0032	Twin-CATVision-MC2-R-CON		●			●	● *1
A122 0033	Twin-CATVision-MC2-AR-CON	●	●			●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

For the computer and user modules to correspond, please ensure that the functional features (letters "ARUD") are identical for both modules. An exception to this is the "delay" component (letter D) which is only used in the computer module. The "D" should not be taken into account when selecting the matching user modules (-CON).

NOTE

The abbreviations, such as CPU and others, are explained in more detail here.

When ordering, please quote the article number and description.

3. Multi-channel 3 (3 x video)

Computer modules

Art.-Nr.	Bezeichnung	Audio	RS232 USB 1.1	transp.	Delay	Desktop	Rackmount
A131 0001	CATVision-MC3-CPU					●	● *1
A131 0003	CATVision-MC3-D-CPU				●	●	● *1
A131 0005	CATVision-MC3-R-CPU		●			●	● *1
A131 0007	CATVision-MC3-RD-CPU		●		●	●	● *1
A131 0009	CATVision-MC3-AR-CPU	●	●			●	● *1
A131 0011	CATVision-MC3-ARD-CPU	●	●		●	●	● *1
A131 0013	CATVision-MC3-U-CPU			●		●	● *1
A131 0015	CATVision-MC3-UD-CPU			●	●	●	● *1
A131 0017	CATVision-MC3-RU-CPU		●	●		●	● *1
A131 0019	CATVision-MC3-RUD-CPU		●	●	●	●	● *1
A131 0021	CATVision-MC3-ARU-CPU	●	●	●		●	● *1
A131 0023	CATVision-MC3-ARUD-CPU	●	●	●	●	●	● *1

User modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A132 0001	CATVision-MC3-CON					●	● *1
A132 0003	CATVision-MC3-R-CON		●			●	● *1
A132 0005	CATVision-MC3-AR-CON	●	●			●	● *1
A132 0007	CATVision-MC3-U-CON			●		●	● *1
A132 0009	CATVision-MC3-RU-CON		●	●		●	● *1
A132 0011	CATVision-MC3-ARU-CON	●	●	●		●	● *1

4. Multi-channel 4 (4 x video)

Computer modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A141 0001	CATVision-MC4-CPU					●	● *1
A141 0003	CATVision-MC4-D-CPU				●	●	● *1
A141 0005	CATVision-MC4-R-CPU		●			●	● *1
A141 0007	CATVision-MC4-RD-CPU		●		●	●	● *1
A141 0009	CATVision-MC4-AR-CPU	●	●			●	● *1
A141 0011	CATVision-MC4-ARD-CPU	●	●		●	●	● *1
A141 0013	CATVision-MC4-U-CPU			●		●	● *1
A141 0015	CATVision-MC4-UD-CPU			●	●	●	● *1
A141 0017	CATVision-MC4-RU-CPU		●	●		●	● *1
A141 0019	CATVision-MC4-RUD-CPU		●	●	●	●	● *1
A141 0021	CATVision-MC4-ARU-CPU	●	●	●		●	● *1
A141 0023	CATVision-MC4-ARUD-CPU	●	●	●	●	●	● *1

4. Multi-channel 4 (4 x video)

For computer and user modules to correspond, please ensure that the functional features (letters "ARUD") are identical for both modules. An exception to this is the "delay" component (letter D) which is only used in the computer module. The "D" should not be taken into account when selecting the matching user modules (-CON).

User modules

Art.-Nr.	Bezeichnung	Audio	RS232	transp. USB 1.1	Delay	Desktop	Rackmount
A142 0001	CATVision-MC4-CON					●	● *1
A142 0003	CATVision-MC4-R-CON		●			●	● *1
A142 0005	CATVision-MC4-AR-CON	●	●			●	● *1
A142 0007	CATVision-MC4-U-CON			●		●	● *1
A142 0009	CATVision-MC4-RU-CON		●	●		●	● *1
A142 0011	CATVision-MC4-ARU-CON	●	●	●		●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and description.

Connectivity

Depending on the equipment features selected, the computer connection cable is included, length 2 m. Power supply cable and power packs are included as standard, redundant power supply always needs to be ordered separately. Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	CPU-x	Computer connection cables	computer connection
	VGA-M/M-x	Video cables	computer connection
	RS232-M/F-x	Serial cables	computer connection
	Audio-M/M-x	Audio cables	computer connection
	USB-AM/BM-x	USB cables	computer connection
	K-C7-x	Ready-made cables	transmission up to 100 m
	K-C5-OIL-x[1)]	Ready-made cables	outside transmission up to 100 m
	K-C7-LD-x	Ready-made cables	transmission over 100 m

x = length in metres, see KVM Connectivity for lengths available.

[1)] Choose the equipment feature "delay" using this cable

Expansions CV Power

Art. no.	Description
A180 0001	CV-Power-CPU
A180 0002	CV-Power-CON

Accessories

Art. no.	Description	
A411 0008	Power-Set 12-Type 2	Power supply, redundant

x = 5, 6, 7

The LwLVision system forms part of the KVM extender group and extends the signals keyboard, analog/digital video, mouse, audio, RS232 and USB 1.1 transparent via fibre optic (2 fibres) up to 10,000 m. USB 1.1 signals are transmitted tranparent up to 2,000 m. The multi-channel variant can transmit 2 video channels.

The system consists of two main components; the computer module (transmitter) and the user module (receiver). The modules are interconnected via fibre optic. The system facilitates the operation of a computer via 2 concurrent (1 x transmitter-side, 1 x receiver-side) users.

Highlights

- ***Resolution up to 1600 x 1200 @ 60 Hz***
- ***Max. transmission length up to 10,000 m via fibre optic***
- ***Galvanic separation of transmitter and receiver***
- ***Insusceptible against interference radiation***
- ***PS/2 and USB keyboard/mouse support***
- ***Support of digital and analog video***
- ***Access protection (username/password)***
- ***Rights management for multiple users***
- ***Redundant power supply (optional)***
- ***Transmission of audio and RS232 signals (data and handshake) included as standard***
- ***Optional equipment feature: USB 1.1 (transparent, high power)***
- ***Multi-channel variants for up to 2 video transmissions***
- ***Local workstation included in the modules as standard***
- ***Integrated power pack***

The LwLVision computer modules transmit the following signals as standard:
1 x analog/digital video
1 x PS/2 or USB keyboard/mouse
1 x audio + transparent RS232
(in combination)

The computer modules are available as a variant with up to 2 video channels.
Both variants are available with the equipment feature "transparent USB 1.1" as an option.

Computer module LwLVision(S) MC2-ARU-PC

Article no.
A121 0051

Front view

As the computer and user modules essentially correspond to one another, the user modules LwLVision-REM also transmit the following signals as standard:
1 x analog/digital video
1 x PS/2 or USB keyboard/mouse
1 x audio + transparent RS232
(in combination)

The user modules are available in the same variant and with the same optional equipment features.

User module LwLVision(S) MC2-ARU-REM

Article no.
A122 0027

Front view

System features

Workstation per module	2 (concurrent)
Number of monitors/workstation	1 to 2
Computers per system	1
Signal type/video	analog/digital video
Resolution	from 640 x 350 @ 120 Hz
	to 1600 x 1200 @ 60 Hz (multi-channel per channel)
Transmission technology Computer module – user module	dedicated fibre optic link
Transmission length (max.) Computer module – user module	550 m via 2 multimode fibres (50/125 µm)
Transmission length (max.) Computer module – user module	10,000 m via 2 singlemode fibres (9/125 µm)
Transmission cable type	Fibre optic (2 fibres)
Update process	local service socket
Operation/configuration via	OSD (AdonIS)
	Hotkeys
Operation environment	
Temperature	+5 to +40 °C
Air humidity	20 – 80 %, non-condensing
Conformity	CE, RoHS

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

Area:

Video	VGA resolutions up to 640 x 350 @ 120 Hz to 1600 x 1200 @ 60 Hz digital (Multi-channel per channel)
Connection	No prior installation work
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected

Operating the main components

The system itself needs no explicit operation. Additional functions (e.g. blanking) are initiated via the OSD AdonIS or keyboard hotkeys.
The configuration of the system is also carried out via AdonIS.

OSD (AdonIS)

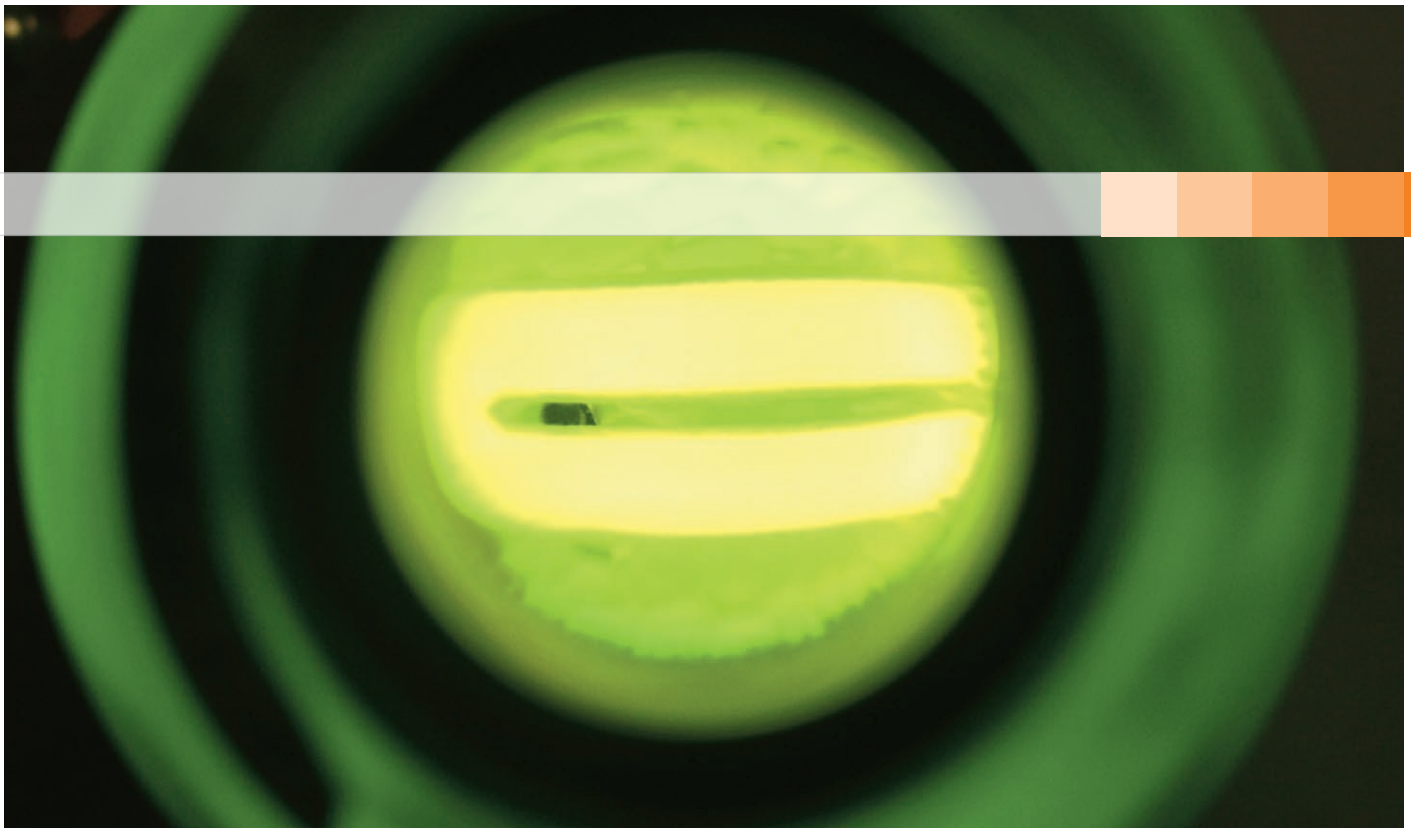
Functional features

Users are provided with a wide range of functions which can be used to modify the operation of the LwLVision to your individual requirements and safety guidelines.

User	Up to 8 individual accounts can be configured (+ supervisor and open access account)
	Define user-based OSD displays
	Assign individual configuration rights
	Assign user-based configuration rights
	Set up viewing rights only on the computer
	Workstation logs itself off automatically following inactivity (optional)
System info	Viewing information on image parameters of the signal input
	Show DDC information on the monitors used
Workstation	OSD position and size can be freely defined
	Password protection can be activated
	Activate access protection via auto log-off when leaving the workstation
	Blanking a workstation while working on the other workstation (optional)
	Activate continuous access to a workstation on the computer
	Protected Mode: Enable image and access to a workstation only after a hotkey is entered
	Edit description of the remote workstation
	Activate permanent display of the workstation name on the remote screen
	Exclusive operating mode available for every workstation
Update	Perform firmware updates via service socket
Video	Automatic video adjustment: Automatic setting of image position, clock and phase
	Automatic video scaling: Automatic adjustment of the resolution on the workstation
	Manual fine adjustment possible for analog image signals
	Set fixed resolution
	Set upper resolution limit

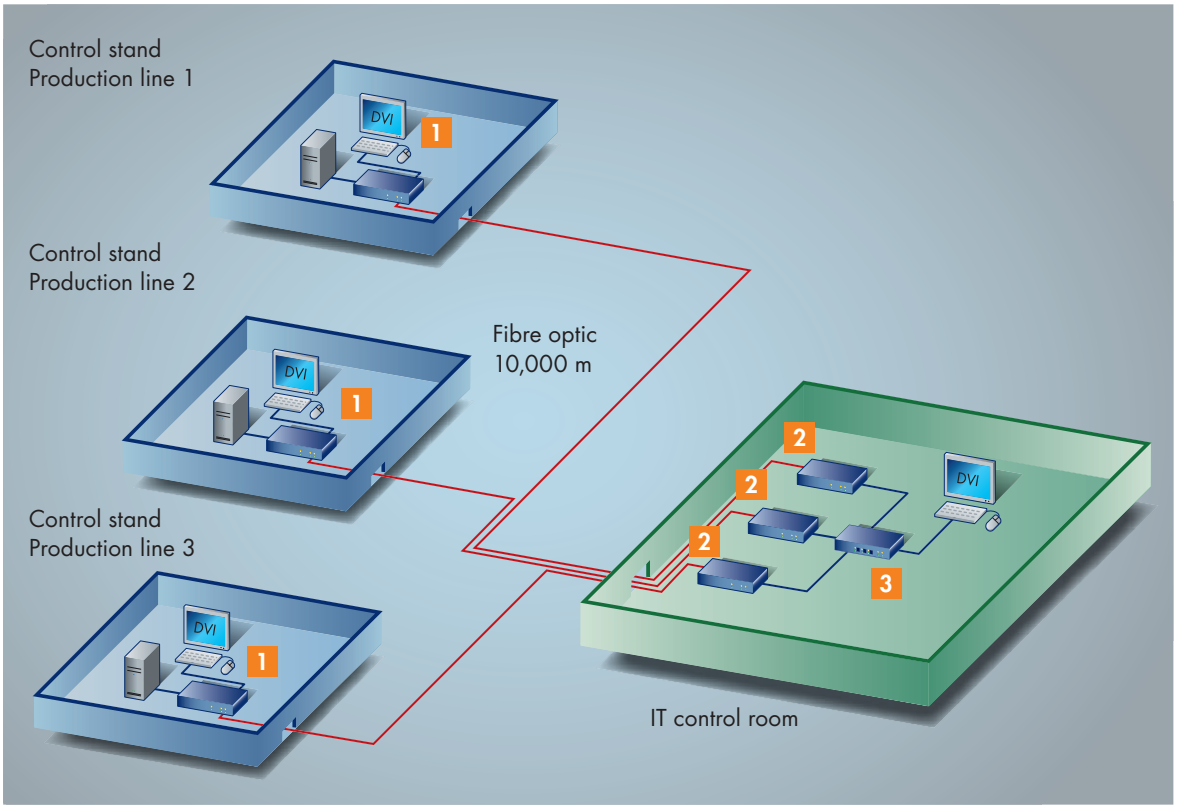
NOTE

The abbreviations such as ARU and others are explained in more detail here.



System diagram

1 LwLVision-AR-PC
2 LwLVision-AR-REM
3 DVIMUX4



Example: Monitoring three production lines
Three production lines are monitored via local control stands. These three control stands are connected to the administration office of the IT control centre 10,000 m away via LwLVision.
In the event of an error, the administrator can access all three production lines at all times on the control computer. The LwLVision system receivers have been centralised via a DVIMUX4 and collected together on an admin workstation. The admin can therefore switch to the relevant line and needs only one monitor, one keyboard and one mouse. The fibre optic transmission is not susceptible to interference from this environment.
The control stand computers can be operated and maintained by the machine operator and the remote administrator. The IT administrator does not need to be on site in the production environment.

Equipment

Each LwLVision system can be ordered with the following optional equipment feature:
- Transparent USB 1.1
This equipment feature can be retrofitted at the factory on request.

Transparent USB 1.1

Component for transmitting transparent USB 1.1 signals

Technical data		Computer module LwLVision-PC	User module LwLVision-REM
Interfaces and specifications			
for workstation		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Additional fibre optic cable	no	
Design		internal	
USB specifications		transparent USB 1.1	
	Transmission length	up to 2000 m	
	Support	High power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

NOTE

The abbreviations such as ARU and others are explained in more detail on here.

1. Single-channel (1 x video)

The LwLVision single-channel is available in 2 variants:
When used with multimode fibres (50/125 µm), LwLVision(M) bridges up to 550 m.
When used with singlemode fibres (9/125 µm), LwLVision(S) bridges up to 10,000 m.

Rear view

LwLVision(S)-ARU-PC
Computer module

Article no.
A111 0057

Rear view

LwLVision(S)-ARU-REM
User module

Article no.
A112 0029

The LwLVision single-channel is also available as a twin variant.
This combines two computer modules or user modules on one 19" height module.
This provides a space-saving way of operating two computers remotely.

Individual features of the modules

Technical data				Computer module LwLVision-AR-PC	User module LwLVision-AR-REM
Power supply	Main	Type		internal power pack	internal power pack
		Connection		1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply		AC100-240V/60-50Hz 0.3-0.2A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type		external power pack	external power pack
		Connection		mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply		+12VDC/1.2A	+12VDC/1.2A
Casing	Material			anodised aluminium	anodised aluminium
	Dimensions	Desktop		210 x 44 x 210 mm	210 x 44 x 210 mm
	(W x H x D)	Rackmount		19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight				approx. 1.4 kg	approx. 1.3 kg
Interfaces/specifications					
	for workstation	Monitor		1 x DVI-I socket	1 x DVI-D socket 1 x D-sub HD 15 socket
		Keyboard/mouse		2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse		–	2 x USB-A socket
		Audio		–	2 x 3.5 mm socket (micro in, speaker)
			Resolution	18 bit digital	
			Sampling rate	48 kHz	
			Bandwidth	22 kHz	
			Microphone pre-amplification	20 dB	
		RS232		–	1 x D-sub 9 plug
			Transmission rate	max. 57,600 bit/s	
			Signals that can be transmitted:	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/Mouse CPU		1 x D-sub HD 15 plug	–
		Video CPU		1 x DVI-I-socket	–
		USB keyboard/mouse CPU		1 x USB-B socket	–
		Audio (for specifications, see above)		2 x 3.5 mm socket (Line in, Line out)	–
		RS232 (for specifications, see above)		1 x D-sub 9 socket	–
	for transmission	Computer module – user module		1 x SC Duplex socket	1 x SC Duplex socket
		No. of optical fibres from Computer module – user module		2	
	for updates			1 x 2.5 mm socket	1 x 2.5 mm socket

2. Multi-channel 2 (2 x video)

The LwLVision Multi-channel is available in 2 variants:
When used with multimode fibres (50/125 µm), LwLVision(M)-MC2 bridges up to 550 m.
When used with singlemode fibres (9/125 µm), LwLVision(S)-MC2 bridges up to 10,000 m.

Rear view

LwLVision(S)-MC2-ARU-PC
Computer module

Article no.
A121 0051

Rear view

LwLVision(S)-MC2-ARU-REM
User module

Article no.
A122 0027

Individual features of the modules

Technical data				Computer module LwLVision-MC2-AR-PC	User module LwLVision-MC2-AR-REM
Power supply	Main	Type		internal power pack	internal power pack
		Connection		1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply		AC100-240V/60-50Hz 0.4-0.2A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type		external power pack	external power pack
		Connection		mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply		+12VDC/1.9A	+12VDC/1.9A
Casing	Material			anodised aluminium	anodised aluminium
	Dimensions	Desktop		435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount		19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight				approx. 2.1 kg	approx. 2.1 kg
Interfaces/specifications					
	for workstation	Monitor		2 x DVI-I socket –	2 x DVI-D socket 2 x D-sub HD 15 socket
		Keyboard/mouse		2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse		–	2 x USB-A socket
		Audio		–	2 x 3.5 mm socket (micro in, speaker)
			Resolution	18 bit digital	
			Sampling rate	48 kHz	
			Bandwidth	22 kHz	
			Microphone pre-amplification	20 dB	
		RS232		–	1 x D-sub 9 plug
			Transmission rate	max. 57,600 bit/s	
			Signals that can be transmitted:	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/Mouse CPU		1 x D-sub HD 15 plug	–
		Video CPU		1 x DVI-I socket	–
		USB keyboard/mouse CPU		1 x USB-B socket	–
		Audio (for specifications, see above)		2 x 3.5 mm socket (Line in, Line out)	–
		RS232 (for specifications, see above)		1 x D-sub 9 socket	–
	for transmission	Computer module – user module		2 x SC Duplex socket	2 x SC Duplex socket
		No. of fibre optics from Computer module – user module		3	
	for updates			1 x 2.5 mm socket	1 x 2.5 mm socket

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-channel (1 x video) Multimode

Computer modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0041	LwLVision(M)-AR-PC	●		●	
A111 0042	LwLVision(M)-AR-PC-RM	●			●
A111 0045	LwLVision(M)-ARU-PC	●	●	●	
A111 0046	LwLVision(M)-ARU-PC-RM	●	●		●
A111 0048	Twin-LwLVision(M)-AR-PC	●		●	● *1
A111 0050	Twin-LwLVision(M)-ARU-PC	●	●	●	● *1

User modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0017	LwLVision(M)-AR-Rem	●		●	
A112 0018	LwLVision(M)-AR-Rem-RM	●			●
A112 0021	LwLVision(M)-ARU-Rem	●	●	●	
A112 0022	LwLVision(M)-ARU-Rem-RM	●	●		●
A112 0055	Twin-LwLVision(M)-AR-Rem	●		●	● *1
A112 0056	Twin-LwLVision(M)-ARU-Rem	●	●	●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

When ordering, please quote the article number and description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-channel (1 x video) Singlemode

Computer modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A111 0053	LwLVision(S)-AR-PC	●		●	
A111 0054	LwLVision(S)-AR-PC-RM	●			●
A111 0057	LwLVision(S)-ARU-PC	●	●	●	
A111 0058	LwLVision(S)-ARU-PC-RM	●	●		●
A111 0060	Twin-LwLVision(S)-AR-PC	●		●	● *1
A111 0062	Twin-LwLVision(S)-ARU-PC	●	●	●	● *1

User modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A112 0025	LwLVision(S)-AR-Rem	●		●	
A112 0026	LwLVision(S)-AR-Rem-RM	●			●
A112 0029	LwLVision(S)-ARU-Rem	●	●	●	
A112 0030	LwLVision(S)-ARU-Rem-RM	●	●		●
A112 0057	Twin-LwLVision(S)-AR-Rem	●		●	● *1
A112 0058	Twin-LwLVision(S)-ARU-Rem	●	●	●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

Multi-channel 2 (2 x video) Multimode

Computer modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A121 0039	LwLVision(M)-MC2-AR-PC	●		●	● *1
A121 0043	LwLVision(M)-MC2-ARU-PC	●	●	●	● *1

User modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A122 0015	LwLVision(M)-MC2-AR-Rem	●		●	● *1
A122 0019	LwLVision(M)-MC2-ARU-Rem	●	●	●	● *1

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Multi-channel 2 (2 x video) Singlemode

Computer modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A121 0047	LwLVision(S)-MC2-AR-PC	●		●	● *1
A121 0051	LwLVision(S)-MC2-ARU-PC	●	●	●	● *1

User modules

Art.-Nr.	Description	Audio RS232	transp. USB 1.1	Desktop	Rackmount
A122 0023	LwLVision(S)-MC2-AR-Rem	●		●	● *1
A122 0027	LwLVision(S)-MC2-ARU-Rem	●	●	●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

Connectivity

Depending on the equipment features selected, the computer connection cable is included, length 2 m. Power supply cable and power packs are included as standard, redundant power supply always needs to be ordered separately. Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	VGA-M/DVI-A-M-x	Video cables	computer connection
	DVI-D-SL-M/M-x	Video cables	computer connection
	ADAPTER DVI-I-HD15F	Adapters (passive)	adapter for comp. connect.
	SOKA-G-2	Particular cables	computer connection
	RS232-M/F-x	Serial cables	computer connection
	Audio-M/M-x	Audio cables	computer connection
	USB-AM/BM-x	USB cables	computer connection
	K-LwLm-SCD-x	Ready-made cables	transmission in multimode
	K-LwLs-SCD-x	Ready-made cables	transmission in singlemode
	K-LwLm-out-SCD-x	Ready-made cables	outside transmission in multimode
	K-LwLm-out-2SCD-x	Ready-made cables	dual outside transmission in multimode

x = length in metres, see KVM Connectivity for lengths available.

Accessories

Art. no.	Description	
A411 0008	Power-Set 12-Type 2	Power supply, redundant

When ordering, please quote the article number and description.

The CAT-RS232 extender system forms part of the group of KVM extenders and extends transparent RS232 signals via CAT-x cable up to 300 m (slow mode up to 400 m).

The system consists of two main components; the computer module (transmitter) and the user module (receiver).
The modules are interconnected via CAT-x cable.

The computer and user modules of the CAT-RS232 extender transmit bidirectional transparent RS232 signals.

Top view

Computer module CAT-RS232-CPU

Article no.
A199 0006

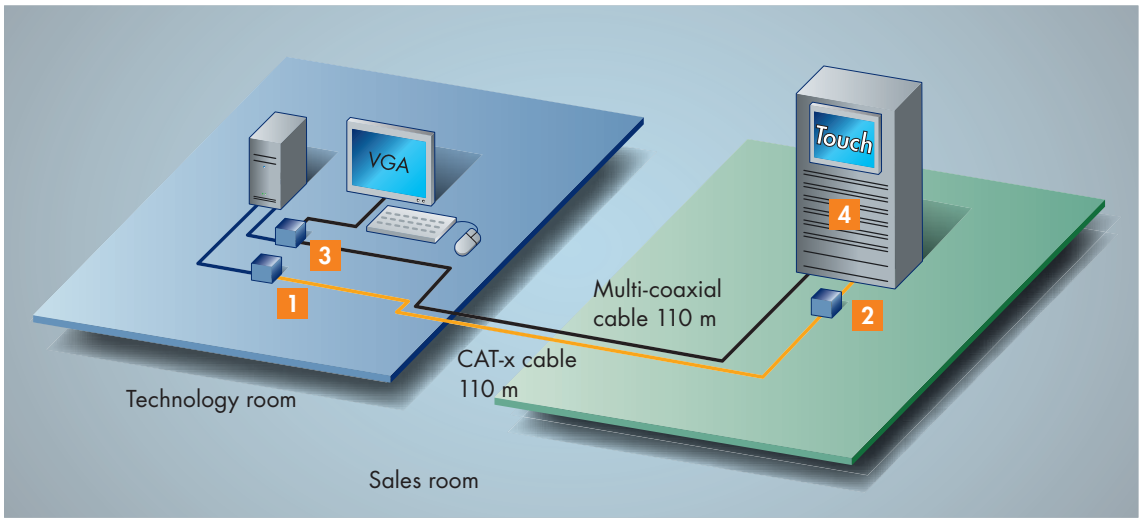
Top view

User module CAT-RS232-CON

Article no.
A199 0007

System diagram

1 CAT-RS232 Extender-CPU
2 CAT-RS232 Extender-CON
3 VideoSplitter 2plus
4 Customer information terminal



Example: Digital signage application from technology room to sales room.
The computer is located in an air-conditioned, access-protected technology room. The combination of CAT-RS232 extender and VideoSplitter 2plus extends the touchscreen signals (RS232/analog video) in the sales area over 110 m.
Here the customer has interactive access to a customer information system. The position of the sales room is not restricted by computers and peripherals, and the computer itself is protected against unauthorised access.

Individual features of the modules

Technical data			Computer module CAT-RS232-CPU	User module CAT-RS232-CON
Power supply	Main	Type	external power pack	external power pack
		Connection	1 x hollow socket 2.1 mm (DCEA6)	1 x hollow socket 2.1 mm (DCEA6)
		Power supply	+5VDC/90 mA	+5VDC/70 mA
Casing	Material		Aluminium	Aluminium
	Dimensions	W x H x D desktop	55 x 104 x 24 mm	55 x 104 x 24 mm
Weight			approx. 0.1 kg	approx. 0.1 kg
Interfaces				
	for workstation	RS232	–	1 x D-sub 9 plug
	to computer	RS232	1 x D-sub 9 socket	–
	for transmission	Computer module – user module	1 x RJ45 socket	1 x RJ45 socket
		No. of CAT-x cables from Computer module – user module	1	
	RS232 specifications	Transmission rate 300 m	Max. 115,200 bit/s	
		Transmission rate 400 m	Max. 57,600 bit/s	
		Transmittable signals	RxD, TxD, RTS, CTS, DTR, DSR, RI, DCD	

System features

Computers per system	1
Transmission type Computer module – user module	dedicated CAT-x link
Transmission length (max.) Computer module – user module	300 m (400 m in "slow mode")
Transmission cable type	CAT-x cable
Operation environment	
Temperature	+5 to +45 °C
Air humidity	< 80 %, non-condensing
Conformity	CE, RoHS

x = 5, 6, 7

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

Area:

Connection	No installation preparations
	With the system the individual modules do not need to be switched on in a specific order
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected

RS232 Extender

Art. no.	Description	
A199 0006	CAT-RS232-CPU	Computer module
A199 0007	CAT-RS232-CON	User module

Connectivity

The computer connection cable of a length of 2 m is included.
Power supply cable and power packs are included as standard.
Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	RS232-M/F-x	Serial cable	computer connection
	K-C7-x	Ready-made cable	transmission

x = length in metres, see KVM Connectivity for lengths available.

When ordering, please quote the article number and description.

The USB extender systems form part of the KVM extender group and extend USB 1.1 or USB 2.0 signals tranparent via CAT-x cable up to 100 or 50 m or via fibre optic (2 fibres) up to 10, 000 m.

The systems consist of two main components, the computer module (transmitter) and the user module (receiver). The modules are interconnected via CAT-x cable or fibre optic.

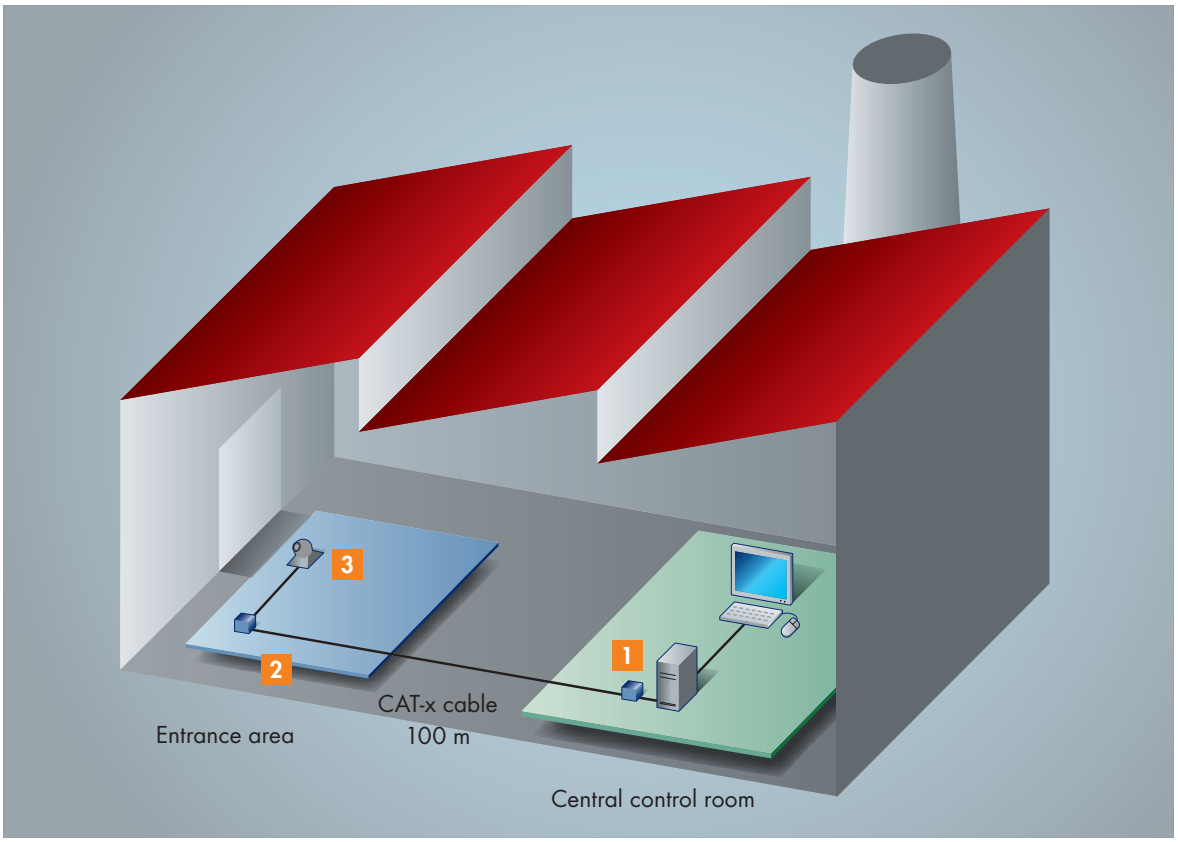
Top view

USB 2.0 Extender 440-Set

Article no.
A199 0009

System diagram:

1. USB 1.1 Extender 110-CPU
2. USB 1.1 Extender 110-CON
3. Monitoring camera



Example: USB extension for the visual monitoring of an entrance area
The entrance area of an industrial building is monitored by camera. The USB 1.1 extender extends the camera data across a distance of 100 m via CAT-x cable. This image data is monitored and processed in the central control room by computer. This means that no computer technology is required in the entrance area itself.

1. USB 1.1 Extender

The USB 1.1 extender series supports the transmission of transparent USB 1.1 signals and USB 2.0 signals in accordance with the 1.1 specification.

On the user module there is either one (type 110) or four (type 410) interfaces available for connecting USB devices.

			USB Extender-110-Set		USB Extender-410-Set	
Technical data			**USB Extender-110 -CPU**	**USB Extender-110 -REM**	**USB Extender-410 -CPU**	**USB Extender-410 -REM**
Power supply		Main Type	external power pack at CPU or REM*		external power pack at CPU or REM*	
		Connection	1 x hollow socket	1 x hollow socket	1 x hollow socket	1 x hollow socket
		Power supply	+15VDC/830mA	+15VDC/460mA	+15VDC/600mA	+15VDC/1.1A
Casing	Material		Metal	Metal	Metal	Metal
	Dimensions	W x H x D desktop	107 x 34 x 84 mm	107 x 34 x 84 mm	107 x 34 x 84 mm	107 x 34 x 84 mm
Weight			approx. 0,3 kg	approx. 0,3 kg	approx. 0,3 kg	approx. 0,3 kg
Operation environment						
		Temperature	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C
		Air humidity	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing
Interfaces						
for workstation			–	1 x USB-A socket	–	4 x USB-A socket
to computer			1 x USB-B socket	–	1 x USB-B socket	–
for transmission						
Computer module - user module			1 x RJ45 socket	1 x RJ45 socket	1 x RJ45 socket	1 x RJ45 socket
No. of CAT-x cables from Computer module - user module			1		1	
Transmission type Computer module - user module			dedicated CAT-x link		dedicated CAT-x link	
Transmission length (max.) Computer module - user module			100 m		100 m	
USB specifications			USB 1.1 (USB 2.0 in accordance with 1.1 specification)		USB 1.1 (USB 2.0 in accordance with 1.1 specification)	
		Support	High Power devices up to 500mA		High Power devices up to 500mA	
		USB transmission rate	1,5 Mbit/s low speed 12 Mbit/s full speed		1,5 Mbit/s low speed 12 Mbit/s full speed	
Conformity			CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS

*for connection of high power units, the connection should be made on the REM unit.

x = 5, 6, 7

2. USB 2.0 Extender

The USB 2.0 Extender series supports the transmission both of transparent USB 1.1 and USB 2.0 signals (assuming there is a USB 2.0 host controller in the computer (EHCI)).

On the user module there is either one (type 140) or four (type 440) interfaces available for connecting USB devices.

		USB 2.0 Extender-140-Set		USB 2.0 Extender-440-Set	
Technical data		**USB 2.0 Extender-140 -CPU**	**USB 2.0 Extender-140 -REM**	**USB 2.0 Extender-440 -CPU**	**USB 2.0 Extender-440 -REM**
Power supply	Main Type	external power pack per module		external power pack per module	
	Connection	1 x hollow socket	1 x hollow socket	1 x hollow socket	1 x hollow socket
	Power supply	+15VDC/500mA	+15VDC/940mA	+5VDC/3A	+5VDC/3A
Casing Material		Metal	Metal	Metal	Metal
Dimensions	W x H x D desktop	107 x 34 x 84 mm	107 x 34 x 84 mm	107 x 34 x 84 mm	114 x 38 x 106 mm
Weight		ca. 0,3 kg	ca. 0,3 kg	ca. 0,3 kg	ca. 0,3 kg
Operation environment					
	Temperature	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C
	Air humidity	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing
Interfaces					
for workstation		–	1 x USB-A socket	–	4 x USB-A socket
to computer		1 x USB-B socket	–	1 x USB-B socket	–
for transmission					
Computer module - user module		1 x RJ45 socket	1 x RJ45 socket	1 x RJ45 socket	1 x RJ45 socket
No. of CAT-x cables from Computer module - user module		1		1	
Transmission type Computer module - user module		dedicated CAT-x link		dedicated CAT-x link	
Transmission length (max.) Computer module - user module		50 m		50 m	
USB specifications		USB 1.1 USB 2.0		USB 1.1 USB 2.0	
	Support	High Power devices up to 500mA		High Power devices up to 500mA	
	USB transmission rate	1,5 Mbit/s low speed 12 Mbit/s full speed 480 Mbit/s full speed		1,5 Mbit/s low speed 12 Mbit/s full speed 480 Mbit/s full speed	
Conformity		CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS

x = 5, 6, 7

3. USB 2.0 Ranger

The USB 2.0 Ranger is available in 2 variants:
When used with multimode fibres (50/125 µm), the USB 2.0 Ranger 442i bridges up to 500 m.
When used with singlemode fibres (9/125 µm), the USB 2.0 Ranger 4424i bridges up to 10,000 m.

The USB 2.0 Ranger series supports the transmission both of transparent USB 1.1 and USB 2.0 signals (assuming there is a USB 2.0 host controller in the computer (EHCI); OHCI/UHCI are not supported).

On the user module there are four interfaces available for connecting USB devices.

		USB 2.0 Ranger 442i-Set		USB 2.0 Ranger 444i-Set	
Technical data		**USB 2.0 Ranger 442i -LEX**	**USB 2.0 Ranger 442i -REX**	**USB 2.0 Ranger 444i -LEX**	**USB 2.0 Ranger 444i -REX**
Power supply	Main Type	external power pack per module		external power pack per module	
	Connection	1 x hollow socket	1 x hollow socket	1 x hollow socket	1 x hollow socket
	Power supply	+5VDC/3A	+5VDC/3A	+5VDC/3A	+5VDC/3A
Casing Material		Metal	Metal	Metal	Metal
Dimensions	W x H x D desktop	107 x 84 x 34 mm	114 x 106 x 38 mm	107 x 84 x 34 mm	114 x 106 x 38 mm
Weigth		ca. 0.3 kg	ca. 0.3 kg	ca. 0.3 kg	ca. 0.3 kg
Operation environment					
	Temperatur	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C	+4 to +40 °C
	Air humidity	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing	< 80 %, non-condensing
Interfaces					
for workstation		–	4 x USB-A socket	–	4 x USB-A socket
to computer		1 x USB-B socket	–	1 x USB-B socket	–
for transmission computer-/workstation modul		1 x LC Duplex socket	1 x LC Duplex socket	1 x LC Duplex socket	1 x LC Duplex socket
	No. of fibre optics cables f. computer-/workstation modul	2		2	
	Transmission type computer-/workstation modul	dedicated fibre optic link		dedicated fibre optic link	
	Transmission length (max.) computer-/workstation modul	500 m		10,000 m	
USB specifications		USB 1.1 USB 2.0		USB 1.1 USB 2.0	
	Support	High Power devices up to 500mA		High Power devices up to 500mA	
	USB transmisson length	1,5 Mbit/s low speed 12 Mbit/s full speed 480 Mbit/s high speed		1,5 Mbit/s low speed 12 Mbit/s full speed 480 Mbit/s high speed	
Conformity		CE	CE	CE	CE

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

Area:

Connection	No installation preparations
	With the system the individual modules do not need to be switched on in a specific order
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected

USB Extender

Art. no.	Description	
A199 0001	USB Extender-110-Set	2 x USB 1.1-110 Extender (transmitter and receiver)
A199 0002	USB Extender-410-Set	2 x USB 1.1-410 Extender (transmitter and receiver)
A199 0003	USB 2.0 Extender-140-Set	2 x USB 2.0-140 Extender (transmitter and receiver)
A199 0009	USB 2.0 Extender-440-Set	2 x USB 2.0-440 Extender (transmitter and receiver)
A199 0010	USB 2.0 Ranger 442i-Set	2 x USB 2.0-442i Extender (transmitter and receiver)
A199 0011	USB 2.0 Ranger 444i-Set	2 x USB 2.0-444i Extender (transmitter and receiver)

Connectivity

The computer connection cable of a length of 2 m is included.
Power supply cable and power packs are included as standard.

Art. no.	Description	Category in KVM Connectivity	Funktion
see KVM Connectivity	USB-AM/BM-x	USB cable	computer connection
	K-C7-x	Ready-made cable	transmission CAT
	K-LwLm-SCD-x	Ready-made cable	transmission in multimode
	K-LwLs-SCD-x	Ready-made cable	transmission in singlemode
	K-LwLm-out-SCD-x	Ready-made cable	outside transmission in multimode
	K-LwLm-out-2SCD-x	Ready-made cable	dual outside transmission in multimode

x = length in metres, see KVM Connectivity for lengths available.

When ordering, please quote the article number and description.

The AudioTransceiver system forms part of the group of KVM extenders. Depending on cable quality it extends and amplifies audio signals in stereo/CD quality via CAT-7 crossover cable up to 600 m.

The system consists of two main components; the computer module (transmitter) and the user module (receiver).
The modules are interconnected via CAT-7 crossover cable.

Front view

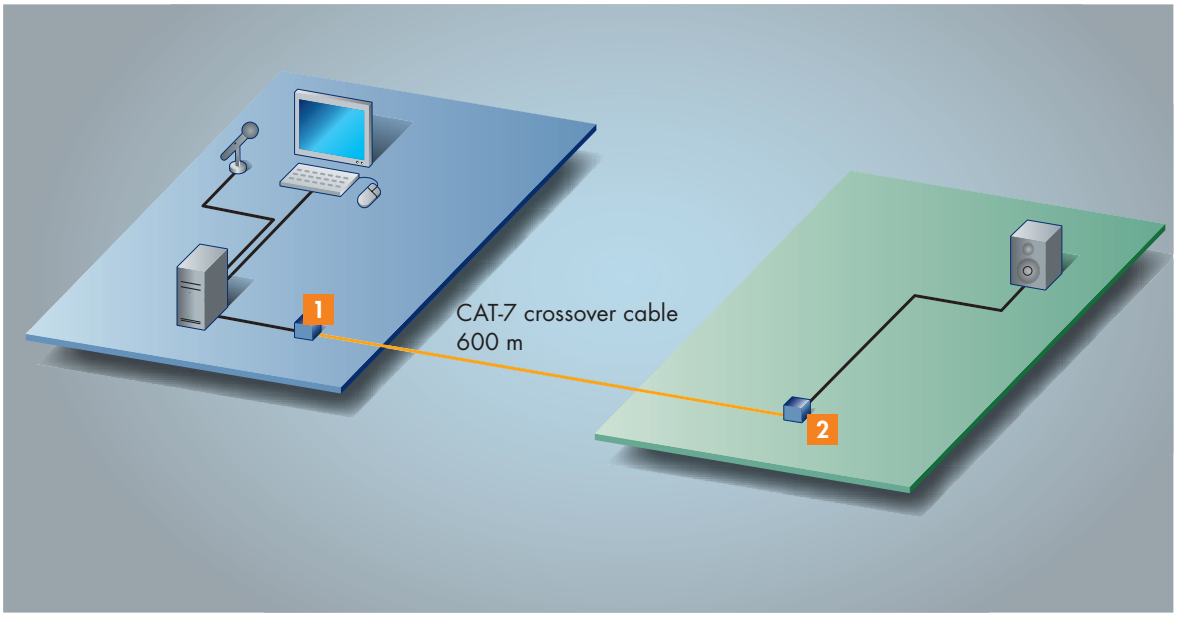
Rear view

AudioTransceiver Set

Article no.
A199 0005

System diagram:

1 AudioTransceiver - transmitter
2 AudioTransceiver - receiver



Example: Central announcements
Acoustic signals or announcements can be transmitted via the AudioTransceiver up to 600 m via CAT-7 crossover cable. Applications for this are to be found in the areas of control centres or retail, for example

Technical data			AudioTransceiver
Computer per system			1
		Transmission type	
		Computer module – user module	dedicated CAT-7 crossover-cable connection
		Transmission length (max.)	
		Computer module – user module	600 m
		Transmission cable type	CAT-7 crossover cable
Power supply	Main	Type	external power pack
		Connection	1 x hollow socket
		Power supply	+5VDC/160 mA
Casing	Material		Aluminium
	Dimensions	W x H x D desktop	103 x 36.5 x 107 mm
Weight			approx. 0.2 kg
Operating environment			
	Temperature		+5 to +45 °C
	Air humidity		< 80 %, non-condensing
Interfaces and specifications			
	for workstation	Audio	3 x 3.5 mm socket (line in, line out, micro in)
	to computer	Audio	3 x 3.5 mm socket (line in, line out, micro in)
	Transmission	Computer module – user module	1 x RJ45 socket
		No. of CAT-7 crossover cables from Computer module – user module	1
	Audio specifications	Resolution	18 bit digital
		Sampling rate	48 kHz
		Bandwidth	22 kHz
		Microphone pre-amplification	20 dB
Conformity			CE, RoHS

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

Area:

Connection	No installation preparations
	With the system the individual modules do not need to be switched on in a specific order
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected

AudioTransceiver

Art. no.	Description	
A199 0005	AudioTransceiver set	2 x AudioTransceiver (transmitter and receiver)

Connectivity

The computer connector cable and a crossover cable are included (length 2 m).
Power supply cable and power packs are included as standard.
Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see	Audio-M/M-x	Audio cable	computer connection
KVM Connectivity	K-C7C-M/M-x	Ready made cable	crossover pin assignment
	K-C7-LD-x	Ready made cable	transmission

x = length in metres, see KVM Connectivity for lengths available.
When ordering, please quote the article number and description.

The VideoSplitter 2plus forms part of the group of KVM Extenders and extends analog video signals via multi-coax cable up to 110 m.

The VideoSplitter 2plus is a standalone unit.

The unit also permits the doubling of the video signal from a computer.

The unit transmits the analog video signal.

There are two possible VideoSplitters 2plus applications:

1. Operation of two local monitors
2. Operation of one local and one remote monitor or beamer for which the video signal is amplified.

The amplification can be infinitely adjusted for the relevant distance.

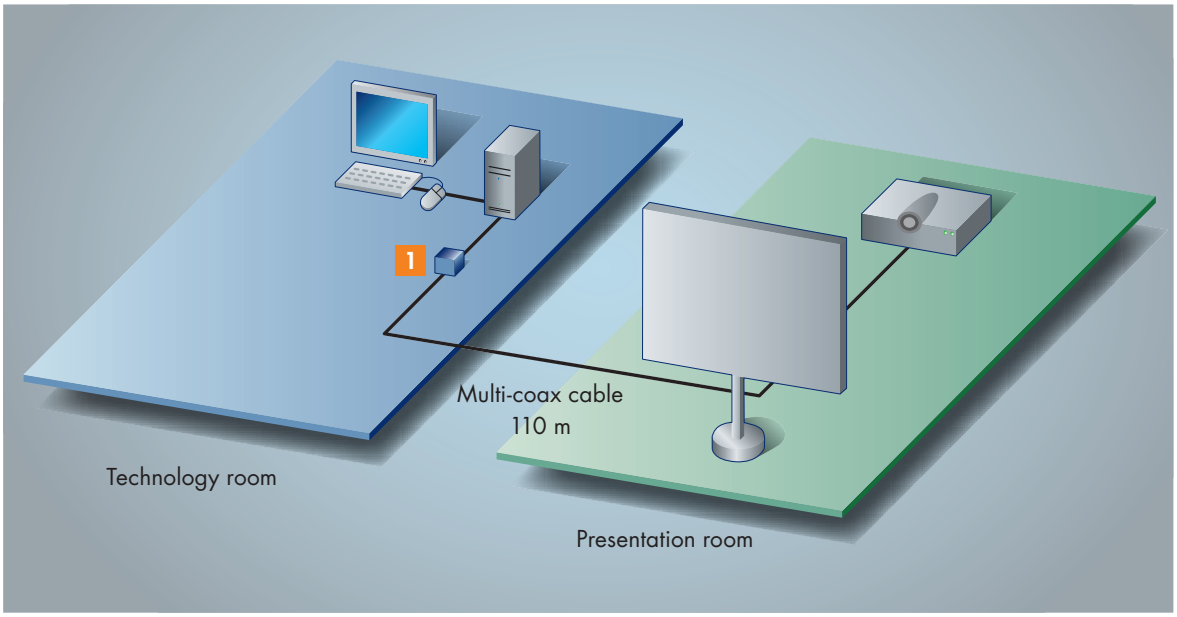
Rear view

VideoSplitter 2plus

Article no.
A400 0001

System diagram:

1 VideoSplitter 2plus



Example: Video extension from the technology room to the presentation room
The computer is located in an air-conditioned, access-protected technology room.
The VideoSplitter 2plus extends the computer's analog video signals from the technology room to the presentation room via 110 m multi-coax cable.
The presentation room is not overloaded with computers and peripherals, the audience is not exposed to the computer emissions and the computer itself is protected against unauthorised access.

System hardware

The design of the system hardware offers a range of advantages in use, and here are just a few of those benefits as an illustration.

Area:

Video	VGA resolutions up to 1600 x 1200 @ 85 Hz can be selected
	Infinitely variable video amplification possible for remote monitor/beamer
Connection	No installation preparations
	Computer hot-plug: The computer and extender can be connected during operation
	Stay-alive: When switching off the extender, the computer remains unaffected
Expansion	By cascading units of the same type, the number of monitors that can be connected can be increased.

Technical data			**VideoSplitter 2plus**
No. of monitors			2 (1 x local, 1 x remote)
Computers per unit			1
Signal type/video			analog video
Resolution			up to 1600 x 1200 @ 85 Hz
Transmission type		Unit – monitor	dedicated multi-coax connection
Transmission length (max.)		Unit – monitor	110 m depending on resolution
Transmission cable type			Multi-coax cable
Operation via			infinitely variable amplification via rotary regulator
Power supply	Main	Type	external power pack
		Connection	1 x hollow socket
		Power supply	+9VDC/150 mA
Casing	Material		Aluminium
	Dimensions	W x H x D desktop	103 x 36.5 x 107 mm
Weight			approx. 0.2 kg
Operating environment			
	Temperature		+5 to +45 °C
	Air humidity		< 80 %, non-condensing
Interfaces			
	for workstation	Monitor	2 x D-sub HD 15 socket
	to computer	Video	1 x D-sub HD 15 socket
		No. of multi-coax cable from unit – monitor	1
Conformity			CE, RoHS

Expansion

By cascading units of the same type, the number of monitors that can be connected can be increased.

VideoSplitter 2plus

Art. no.	Description
A400 0001	VideoSplitter 2plus

Connectivity

The computer connection cable of a length of 2 m is included.
Power supply cable and power packs are included as standard.
Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	VGA-M/M-x	VGA cable	computer connection
	V-KMVL-M/F-x	Ready-made cable	transmission up to 50 m
	KMC-M/F-x	Ready-made cable	transmission over 51 m

x = length in metres, see KVM Connectivity for lengths available.
When ordering, please quote the article number and description.

The FireWire-800 Transceiver system forms part of the group of KVM extender and extends signals in accordance with protocol IEEE1394b via fibre optic (2 fibres) up to 500 m.

The system consists of two main components; the computer module (transmitter) and the user module (receiver).
The modules are interconnected via fibre optic.

The FireWire-800 Transceiver computer and user modules transmit bidirectional signals in accordance with protocol IEEE1394b-2002 - also downward-compatible with IEEE 1394a-2000 and -1995.

The computer and user modules are units with the same design and can be used interchangeably.

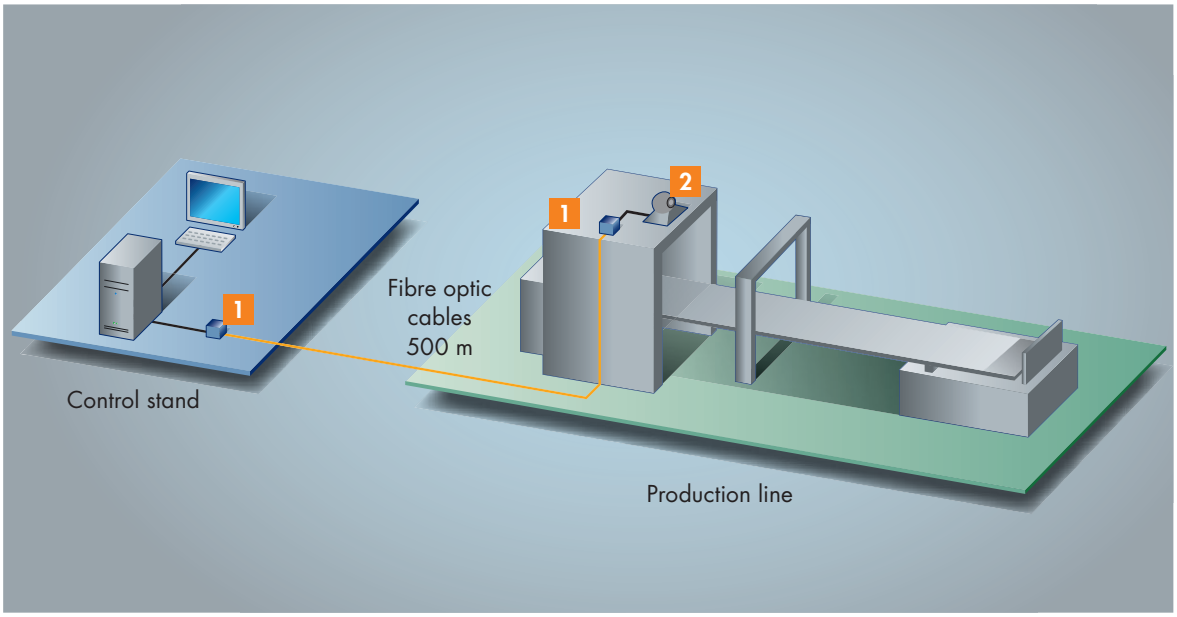
Front and rear view

FireWire-800 Transceiver

Article no.
A199 0004

System diagram:

1 FireWire-800 Transceiver
2 Industrial camera



Example: FireWire extension from machine control stand to production line for visual process monitoring
The production line is monitored using an industrial camera.
The FireWire-800 transceiver extends the camera data across a distance of 500 m via fibre optic cable to the control stand.
At the control stand workstation the image data is monitored and processed by computer.
The operator and computer do not need to be exposed to the production environment.
The fibre optic transmission is not susceptible to interference from the environment.

Technical data			FireWire-800 Transceiver
Computer per system			1
Transmission type		Computer module – user module	dedicated fibre optic connection
Transmission length (max.)		Computer module – user module	500 m
Transmission cable type			2 multimode fibres (50 µm)
Power supply	Main	Type	external power pack
		Connection	1 x hollow socket
		Power supply	+12VDC/1.0A
Casing	Material		Metal
	Dimensions	W x H x D desktop	101 x 24 x 91 mm
Weight			approx. 0.3 kg
Operating environment			
	Temperature		+0 to +50 °C
	Air humidity		< 80 %, non-condensing
Interfaces and specifications			
	for workstation		1 x bilingual socket (9)
	Computer		1 x bilingual socket (9)
	Transmission	Computer module – user module	1 x LC duplex socket
	Specifications	Protocols	IEEE 1394b 2002 IEEE 1394a 2000 + 1995
		Transmission rate max.	800 Mbit/s
Conformity			CE, RoHS

Order list

Art. no.	Description	
A199 0004	FireWire-800 Transceiver-Set	2 x FireWire-800 Transceiver (transmitter and receiver)

Connectivity

Computer connection cable of 0.7m in length are included.
Power supply cable and power packs are included as standard.

Art. no.	Description	Category in KVM Connectivity	Function
see KVM Connectivity	K-LwLm-LCD-x	Ready-made cable	transmission

x = length in metres, see KVM Connectivity for lengths available.
When ordering, please quote the article number and description.

Legend

A wealth of variants thanks to the modular design
A lot of G&D products are available with different equipment options. The icons below the product pictures show the equipment of the corresponding product.

Important note for KVM Extender
To ensure that the computer and workstation modules are compatible, please check that functional features (letters "ARU" as well as "M" or "S") are identical on both modules. An exception to this is the "delay" component (letter "D") at CATVision which is only used in the computer module.

Example CATVision:

CATVision-ARUD-CPU	+ CATVision-ARU-CON	= ok
CATVision-ARUD-CPU	+ CATVision-U-CON	= not ok

Example LwLVision:

LwLVision(S)-MC2-ARU-PC	+ LwLVision(S)-MC2-ARU-REM	= ok
LwLVision(S)-MC2-ARU-PC	+ LwLVision(M)-MC2-AR-REM	= not ok

ABBREVIATIONS

CPU	=	Computer module
PC	=	Computer module
CON	=	User module
REM	=	User module
MC2	=	Multichannel 2
MC3	=	Multichannel 3
MC4	=	Multichannel 4
M	=	Multimode
S	=	Singlemode
RM	=	For assembly in a 19" rack
A	=	Audio
AR	=	Audio + RS232
R	=	RS232
U	=	transparent USB 1.1
D	=	Delay

EQUIPMENT

= digital video

= digital dual link video

= analog Video

= Delay

= Power

= Audio

= RS232

= FireWire-800

= USB

= Desktop

= Rackmount

<<< BACK

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Illustrations are examples only.
Descriptions normally reflect the max. expansion depth.

Taric Code
Devices:85176200 Cables:85442000
WEEE-Reg.-Nr. DE30763240

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